

# CHAPTER IV — SUMMARY OF TROPICAL CYCLONES

## 1. GENERAL RESUME

During 1974, there was a sharp reversal from the abnormally light tropical cyclone activity observed during 1973. Named tropical cyclones numbered 32 during 1974 (Table 4-1) which is 19% higher than the latest 15-year average displayed in Table 4-2. Climatological statistics on typhoons are given in Table 4-3. Less than half (47%) of these tropical storms developed to typhoon strength (15) - well below the average ratio of 65% derived from the long term average (Table 4-4). Deviation of normal monthly typhoon distribution was particularly noticeable during July and August when only

3 were recorded in contrast to the climatological average of 7.

Warnings were issued in 1974 on numbered tropical cyclones during 148 calendar days spanning all months except February. This closely matches the mean of the past 15 years (Table 4-5) but is a significant increase (almost twice) over the number of warning days during 1973.

The number of typhoon days (Table 4-6), however, numbered only 62, well below the 15-year average of 90 days. This reflects the tendency of this season's tropical cyclones not to develop beyond storm strength.

TABLE 4-1. 1974 TROPICAL CYCLONES

CYCLONE	TYPE	NAME	(PRD OF WRNG)	CALENDAR		MAX SFC	MIN SLP	WARNINGS ISSUED		
				DAYS OF WARNING	WIND+			TOTAL	NO. AS TYPHOONS	DISTANCE TRAVELED
01	TS	WANDA	10 JAN - 13 JAN	4	55	992	15	—	—	1050
02	TS	AMY	14 MAR - 19 MAR	6	45	987	21	—	—	1750
03	TS	BABE	26 APR - 02 MAY	7	60	983	26	—	—	1600
04	TY	CARLA	02 MAY - 07 MAY	6	80	963	22	7	—	1550
05	TD	—	07 JUN - 08 JUN	2	30	—	—	5	—	150
06	TY	DINAH	08 JUN - 14 JUN	7	70	974	26	7	—	1550
07	TS	EMMA	13 JUN - 18 JUN	6	60	988	21	—	—	1300
08	TS	FREDA	21 JUN - 22 JUN	2	45	989	7	—	—	800
09	TY	GILDA	30 JUN - 07 JUL	8	90	944	28	18	—	1400
10	TS	HARRIET	15 JUL - 18 JUL	4	45	996	13	—	—	900
11	TS	JEAN	17 JUL - 20 JUL	4	45	995	14	—	—	850
12	TY	IVY	17 JUL - 22 JUL	6	95	945	23	15	—	1850
13	TS	KIM	23 JUL - 24 JUL	2	50	989	6	—	—	350
14	TS	LUCY	09 AUG - 11 AUG	3	54	995	10	—	—	350
15	TY	MARY	*	13	70	964	47	5	—	3400
16	TD	—	14 AUG - 15 AUG	2	30	994	5	—	—	250
17	TS	NADINE	15 AUG - 18 AUG	4	50	982	14	—	—	1600
18	TS	OLIVE	(CENTRAL PACIFIC HURRICANE CENTER)							
19	TY	POLLY	25 AUG - 02 SEP	9	95	948	31	20	—	1850
20	TD	—	27 AUG - 28 AUG	2	30	994	6	—	—	300
21	TS	ROSE	28 AUG - 31 AUG	4	50	985	13	—	—	800
22	TY	SHIRLEY	04 SEP - 09 SEP	6	70	972	21	9	—	950
23	TS	TRIX	05 SEP - 06 SEP	2	40	—	5	—	—	250
24	TY	VIRGINIA	12 SEP - 16 SEP	5	75	969	15	9	—	780
25	TS	WENDY	24 SEP - 30 SEP	7	60	984	24	—	—	800
26	TY	AGNES	24 SEP - 02 OCT	9	105	961	30	17	—	2000
27	TY	BESS	08 OCT - 14 OCT	7	65	980	25	10	—	1950
28	TY	CARMEN	14 OCT - 19 OCT	6	75	974	21	13	—	1250
29	TY	DELLA	21 OCT - 27 OCT	7	90	958	25	16	—	1600
30	TY	ELAINE	24 OCT - 31 OCT	8	95	943	29	14	—	1700
31	TS	FAYE	01 NOV - 04 NOV	4	55	987	13	—	—	1250
32	TY	GLORIA	03 NOV - 09 NOV	7	120	931	27	15	—	1850
33	TS	HESTER	14 NOV - 15 NOV	2	35	1000	5	—	—	350
34	TY	IRMA	21 NOV - 02 DEC	12	115	939	44	19	—	2250
35	TS	JUDY	18 DEC - 19 DEC	2	40	998	6	—	—	150
36	TS	KIT	*	5	40	995	14	—	—	1200
1974 TOTALS							657	194		

\*Mary 11 Aug - 19 Aug and 23 Aug - 26 Aug  
Kit 19 Dec - 21 Dec and 23 Dec - 24 Dec

\*\*Overlapping days included only once in sum  
+Over water estimate (one-minute averaging period)

No super typhoons (maximum sustained winds > 130 knots) were observed during 1974, the first year since documentation began in 1959 that no typhoon reached this category. It is suspected, however, that Typhoon Gloria may have approached super typhoon intensity prior to landfall on the Philippine archipelago in early November. This is based on the trend of central pressure fall of the final aircraft fixes, however, lack of additional supporting evidence restricts Gloria from being entered in the super typhoon category.

One of the synoptic features during August and September was the penetration of monsoon westerlies to more poleward latitudes than normal. This situation was caused initially by the extremely large circulation of Typhoon Mary moving to subtropical latitudes. This resulted in an anomalous monsoon trough location extending from coastal South China northeastward to the Ryukyus. Of the four tropical cyclones that developed during this period three (Tropical Depression No. 20, Tropical Storm Rose, and Typhoon Shirley) displayed unusual initial courses compared to climatology by heading northeasterly.

By early October, the monsoon trough became re-established near its normal position in the Philippine Sea, and triggered development of a series of destructive cyclones which crossed the Philippine Islands. This parade of tropical cyclones, led by Bess in October and climaxed by Gloria in early November, subjected the Island of Luzon to the strikes of five typhoons in a period of slightly less than a month. The frequency of these repeated onslaughts to Luzon is unparalleled in climatological records available since World War II.

The Tropical Upper Tropospheric Trough (TUTT) was very active during 1974 producing 19% of the season's named tropical cyclones. Typhoons Polly, Virginia, Agnes and Tropical Storms Freda, Kim, and Wendy developed from disturbances caused by upper lows in the trough. A study of the long term average (Atkinson 1974) indicates approximately 15% of the named tropical cyclones in the western North Pacific can be traced to these disturbances which originate in the trade wind region, and are produced on the south and east periphery of the upper level lows.

TABLE 4-2 FREQUENCY OF TROPICAL STORMS (INCLUDING TYPHOONS) BY MONTHS AND YEARS

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1945	0	0	0	1	1	2	5	7	6	1	3	0	26
1946	0	0	1	0	1	2	3	2	3	1	2	0	15
1947	0	0	0	1	0	1	1	3	3	5	6	1	27
1948	1	0	0	0	2	2	2	5	5	4	3	2	26
1949	1	0	0	0	0	1	5	3	6	1	3	2	22
1950	0	0	0	0	1	2	3	2	3	3	3	1	18
1951	0	0	1	2	1	1	1	2	2	4	1	2	17
1952	0	0	0	0	0	3	3	4	5	6	3	4	28
1953	0	1	0	0	1	2	2	6	3	4	3	1	23
1954	0	0	1	0	1	0	1	6	4	3	3	0	19
1955	1	0	1	1	0	1	6	3	3	4	1	1	22
1956	0	0	1	2	0	1	2	5	5	2	3	1	22
1957	2	0	0	1	1	1	1	3	5	4	3	0	21
1958	1	0	0	0	1	3	5	3	3	3	2	1	22
1959	0	1	1	1	0	0	3	6	6	4	2	2	26
AVERAGE	0.4	0.1	0.5	0.5	0.7	1.5	3.0	4.0	4.3	3.3	2.7	1.2	22.3
(1945-59)													
1960	0	0	0	1	1	3	3	10	3	4	1	1	27
1961	1	1	1	1	3	2	5	4	6	5	1	1	31
1962	0	1	0	1	2	0	6	7	3	5	3	2	30
1963	0	0	0	1	1	3	4	3	5	5	0	3	25
1964	0	0	0	0	2	2	7	9	7	6	6	1	40
1965	2	2	1	1	2	3	5	6	7	2	2	1	34
1966	0	0	0	1	2	1	5	8	7	3	2	1	30
1967	1	0	2	1	1	1	6	8	7	4	3	1	35
1968	0	0	0	1	1	1	3	8	3	6	4	0	27
1969	1	0	1	1	0	0	3	4	3	3	2	1	19
1970	0	1	0	0	0	2	2	6	4	5	4	0	24
1971	1	0	1	3	4	2	8	4	6	4	2	0	35
1972	1	0	0	0	1	3	6	5	4	5	2	3	30
1973	0	0	0	0	0	0	7	5	2	4	3	0	21
1974	1	0	1	1	1	4	4	5	5	4	4	2	32
AVERAGE	0.5	0.3	0.5	0.9	1.4	1.8	4.9	6.1	4.8	4.3	2.6	1.1	29.3
(1960-70)													

Based on available casualty reports, Typhoons Dinah and Gilda, Tropical Storm Wendy, and Tropical Depression No. 20 accounted for the majority of the tropical cyclone related casualties (Table 4-7). Typhoon Gilda proved the most disastrous of the year. Gilda's circulation triggered flashfloods and landslides in Korea and Japan in early July resulting in a heavy toll of lives (128). Damage estimates of \$1.2 billion in Japan rank it among the most costly to strike that country in recent years. Torrential rains from the extra-tropical stages of Tropical Depression No. 20 produced similar results on the western coast of Korea in late August, accounting for a combined missing and dead total of 77. The worst marine disaster occurred near southern Taiwan as 3,500 ton Panamanian freighter SUN SHANG sank in heavy seas produced by Tropical Storm Wendy (60 knots) with the loss of 31 crewmen.

The northern Philippine Islands experienced a high frequency of typhoons (7) during the year with Dinah's crossing Luzon in June being the most disastrous as casualties totaled 106 persons. The succession of typhoons during October and November crossing Luzon, however, also inflicted heavy damage (\$23 million) to the

rice and sugar cane crops with serious economic impact on the island republic. Reconnaissance of one of these typhoons (Bessi) while in the South China Sea, led to the tragic loss of a U.S. Air Force weather reconnaissance aircraft and its crew of six.

Much of the pertinent meteorological data and tropical cyclone damage statistics in this chapter were based on information received from the following sources: Weather Bureau of the Republic of China; Royal Observatory of Hong Kong; Office of the High Commissioner, Trust Territory of the Pacific Islands; Japan Meteorological Agency; National Weather Service of the Republic of the Philippines; and the Environmental Data Service, National Oceanic and Atmospheric Administration, Liverpool Underwriters Association.

- 1 The climatology of tropical cyclone activity in the western North Pacific during the last 30 years indicates a significant increase in tropical cyclones since 1960. This is probably due to better observational data, especially satellites, during recent years. Therefore, JTWC considers the last 15-year period as the most representative of the long term average.

TABLE 4-3 FREQUENCY OF TROPICAL STORMS REACHING TYPHOON INTENSITY BY MONTHS AND YEARS

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1945	0	0	0	0	0	1	2	5	3	1	1	0	13
1946	0	0	1	0	1	1	3	1	3	1	2	0	13
1947	0	0	0	0	1	1	0	3	4	5	4	1	19
1948	1	0	0	0	2	0	2	2	4	1	2	1	15
1949	1	0	0	0	0	1	3	3	3	1	1	1	14
1950	0	0	0	0	1	1	1	2	1	3	2	1	12
1951	0	0	1	2	1	1	1	2	2	3	1	2	16
1952	0	0	0	0	0	3	1	3	3	4	3	2	19
1953	0	1	0	0	1	1	2	4	2	4	1	1	17
1954	0	0	0	0	1	0	1	4	4	2	3	0	15
1955	1	0	1	1	0	1	5	3	3	2	1	1	19
1956	0	0	1	1	0	0	2	4	5	1	3	1	18
1957	1	0	0	1	1	1	1	2	5	3	3	0	18
1958	1	0	0	0	1	3	4	3	3	3	1	1	20
1959	0	0	0	1	0	0	1	5	3	3	2	2	17
AVERAGE	0.3	0.1	0.3	0.4	0.7	1.0	1.9	3.1	3.2	2.5	2.0	0.9	16.3
(1945-59)													
1960	0	0	0	1	0	2	2	8	0	4	1	1	19
1961	0	0	1	0	2	1	3	3	5	3	1	1	20
1962	0	0	0	1	2	0	5	7	2	4	3	0	24
1963	0	0	0	1	1	2	3	3	3	4	0	2	19
1964	0	0	0	0	2	2	6	3	5	3	4	1	26
1965	1	0	0	1	2	2	4	3	5	2	1	0	21
1966	0	0	0	1	2	1	3	6	4	2	0	1	20
1967	0	0	1	1	0	1	3	4	4	3	3	0	20
1968	0	0	0	1	1	1	1	4	3	5	4	0	20
1969	1	0	0	1	0	0	2	3	2	3	1	0	13
1970	0	1	0	0	0	1	0	4	2	3	1	0	12
1971	0	0	0	3	1	2	6	3	5	3	1	0	24
1972	1	0	0	0	1	1	4	4	3	4	2	2	22
1973	0	0	0	0	0	0	4	2	2	4	0	0	12
1974	0	0	0	0	1	2	1	2	3	4	2	0	15
AVERAGE	0.2	0.1	0.1	0.7	1.0	1.2	3.1	3.9	3.2	3.4	1.6	0.5	19.1
(1960-74)													

TABLE 4-4. RATIO OF TROPICAL STORM FREQUENCY DEVELOPMENT TO TYPHOON INTENSITY (1960-1974)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
AVERAGE NUMBER OF TROPICAL STORMS	0.5	0.3	0.5	0.9	1.4	1.8	4.9	6.1	4.8	4.3	2.6	1.1	29.3
AVERAGE NUMBER OF TYPHOONS	0.2	0.1	0.1	0.7	1.0	1.2	3.1	3.9	5.2	5.4	1.6	0.5	19.1
RATIO	.40	.33	.20	.78	.71	.67	.63	.64	.67	.79	.62	.45	.65

TABLE 4-5. SUMMARY OF JTWC WARNINGS 1960-1974

	1960-1974 (AVG)	1970	1971	1972	1973	1974
TOTAL NUMBER OF WARNINGS	704	533	747	739	390	657
CALENDAR DAYS OF WARNING	146	127	163	139	77	148
NUMBER OF WARNING DAYS WITH TWO OR MORE CYCLONES	50	29	54	46	27	38
NUMBER OF WARNING DAYS WITH THREE OR MORE CYCLONES	10	0	6	13	9	4

TABLE 4-6. TYPHOON DAYS 1960 - 1974

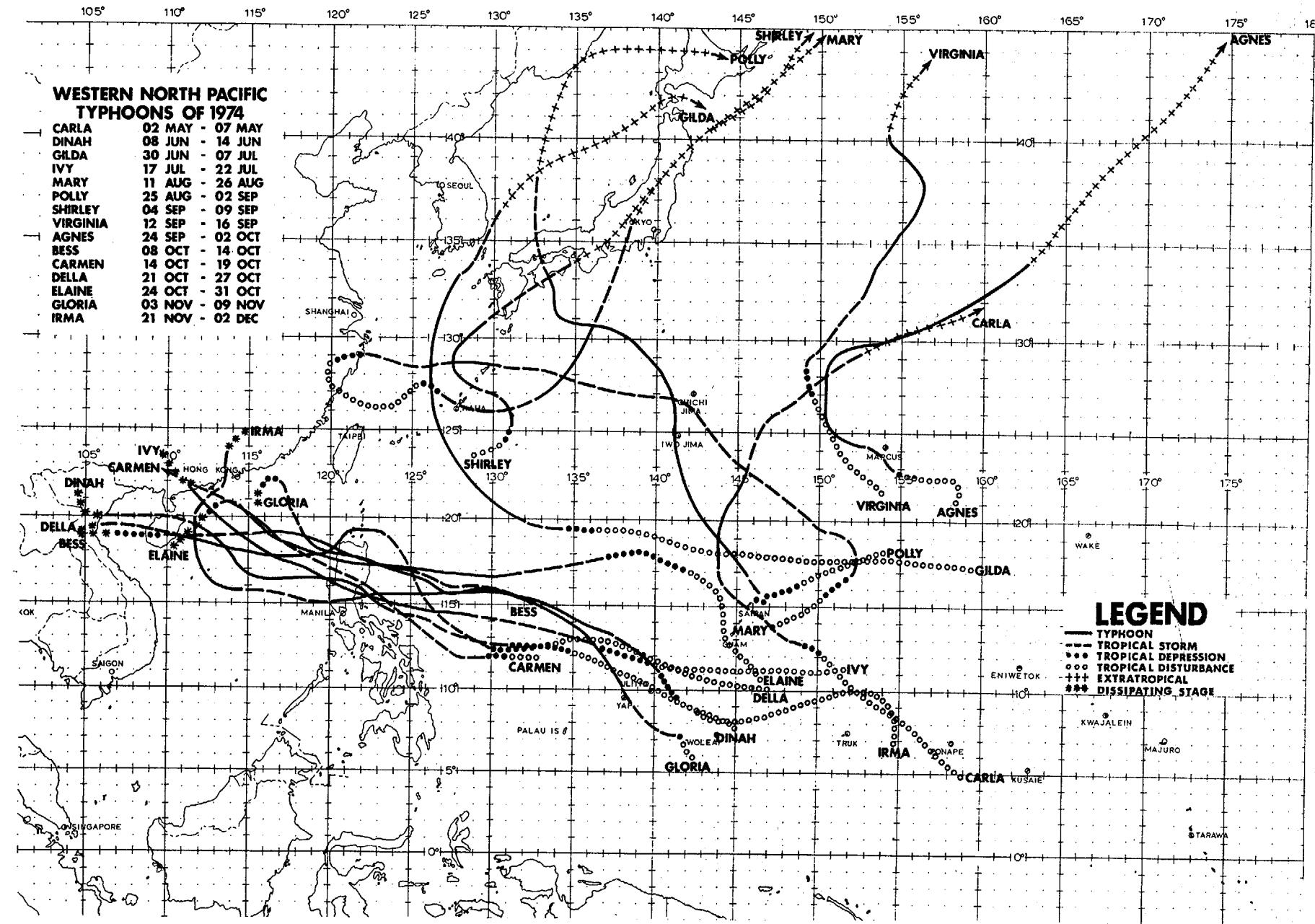
YEAR	JAN	FEB	MAR	APR.	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL PER YEAR
1960	---	---	---	2	---	10	13	36*	---	23*	2*	12	98
1961	---	---	8	---	8	2	10*	15	23*	17*	6	6	95
1962	---	---	---	7	4	---	14*	37*	8	17*	19*	---	119
1963	---	---	---	4	5	15	11	23*	14*	24*	---	11	107
1964	---	---	---	---	7	5*	22*	18*	28*	14	11*	6	111
1965	2	---	---	2	5	12*	19*	23*	25*	14	6	---	108
1966	---	---	5	11	6	7*	16*	23*	11	4	3	86	
1967	---	2	7	---	4	14*	10	32*	21*	21*	---	111	
1968	---	---	6	1	7	6	8	32*	19	18*	---	97	
1969	5	---	5	---	---	8	6	10	18	10*	---	62	
1970	5	---	---	---	2	5	24*	16	21*	6	---	79	
1971	---	4	13*	8	20*	27*	21*	11	7	7	---	111	
1972	2	---	---	1	6	39*	16	16*	21	9	11	121	
1973	---	---	---	---	---	11*	7*	4	20*	---	---	42	
1974	---	3	4	10	6	9	16*	13	---	---	62		
TOTAL	9	5	10	42	58	81	209	272	261	280	132	49	1408
MEAN	0.6	0.3	0.7	2.8	3.9	5.4	13.9	18.1	17.4	18.7	8.8	3.3	93.9

\*Two typhoons occurring on the same day are counted as two typhoon days.

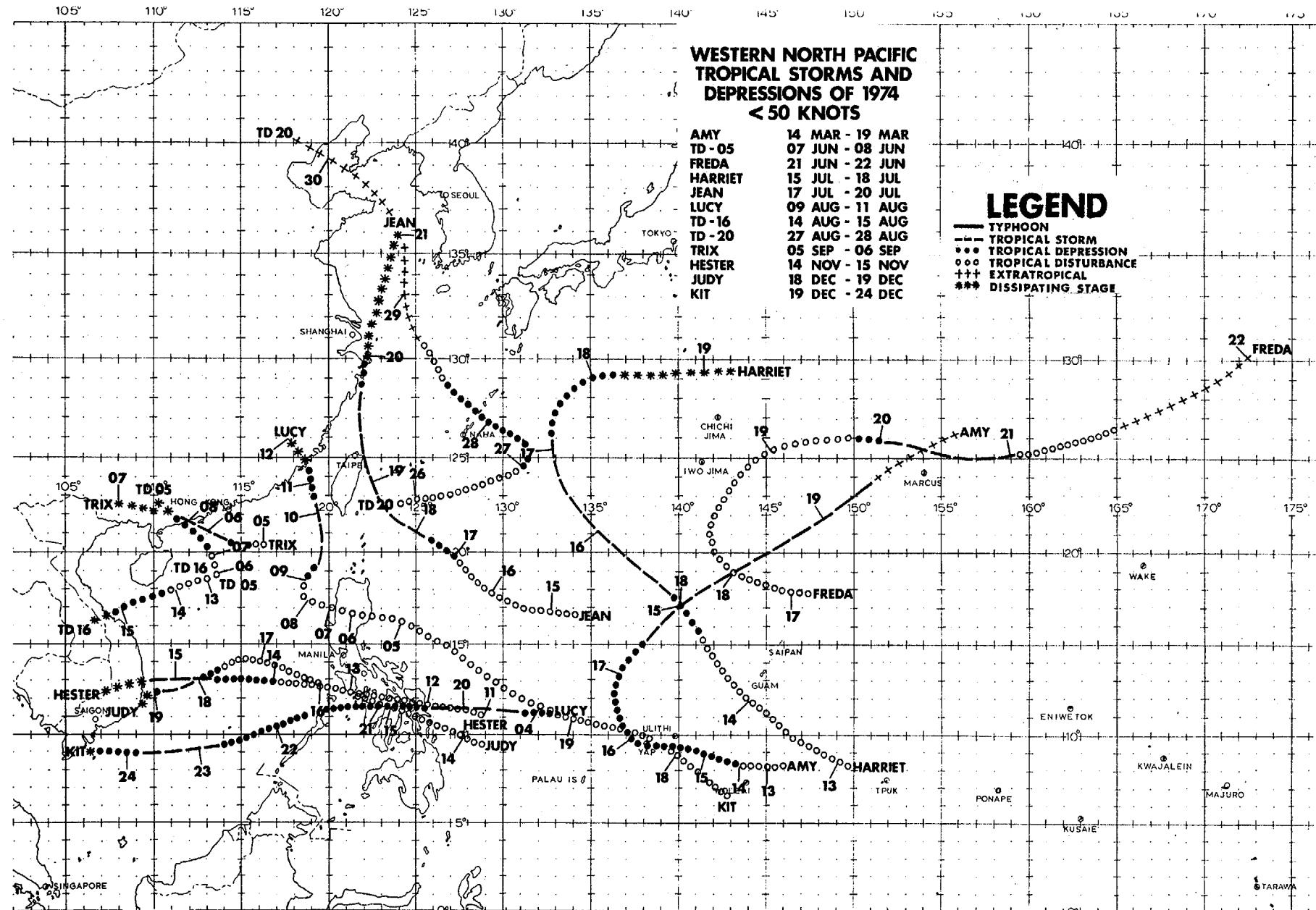
TABLE 4-7. LIST OF ESTIMATED CASUALTIES FOR THE 1974 SEASON

TYPE	NAME	DEATHS	MISSING
T	DINAH	35	
T	GILDA	125	26
T	IVY	20	46
T	MARY	13	0
TD	NO. 20	9	68
T	POLLY	9	8
T	SHIRLEY	13	---
TS	WENDY	47	7
T	BESS	33	3
T	CAROLYN	25	---
T	ELAINE	36	21
TS	FAYE	---	2
T	GLORIA	10	---
T	IRMA	11	---
TS	KIT	17	---
TOTAL		434	214

NOTE: Only cyclones for which data are available are listed.



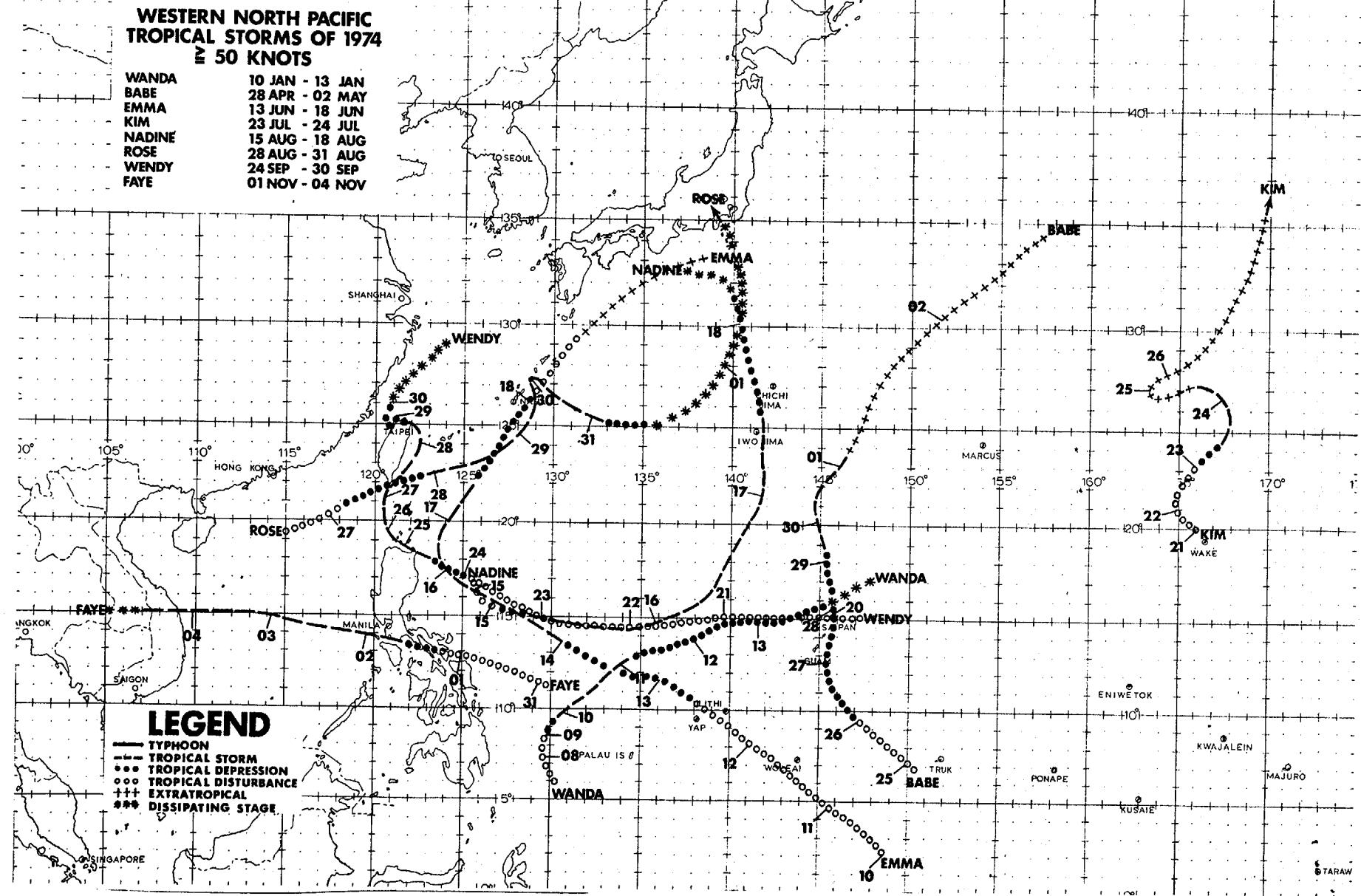
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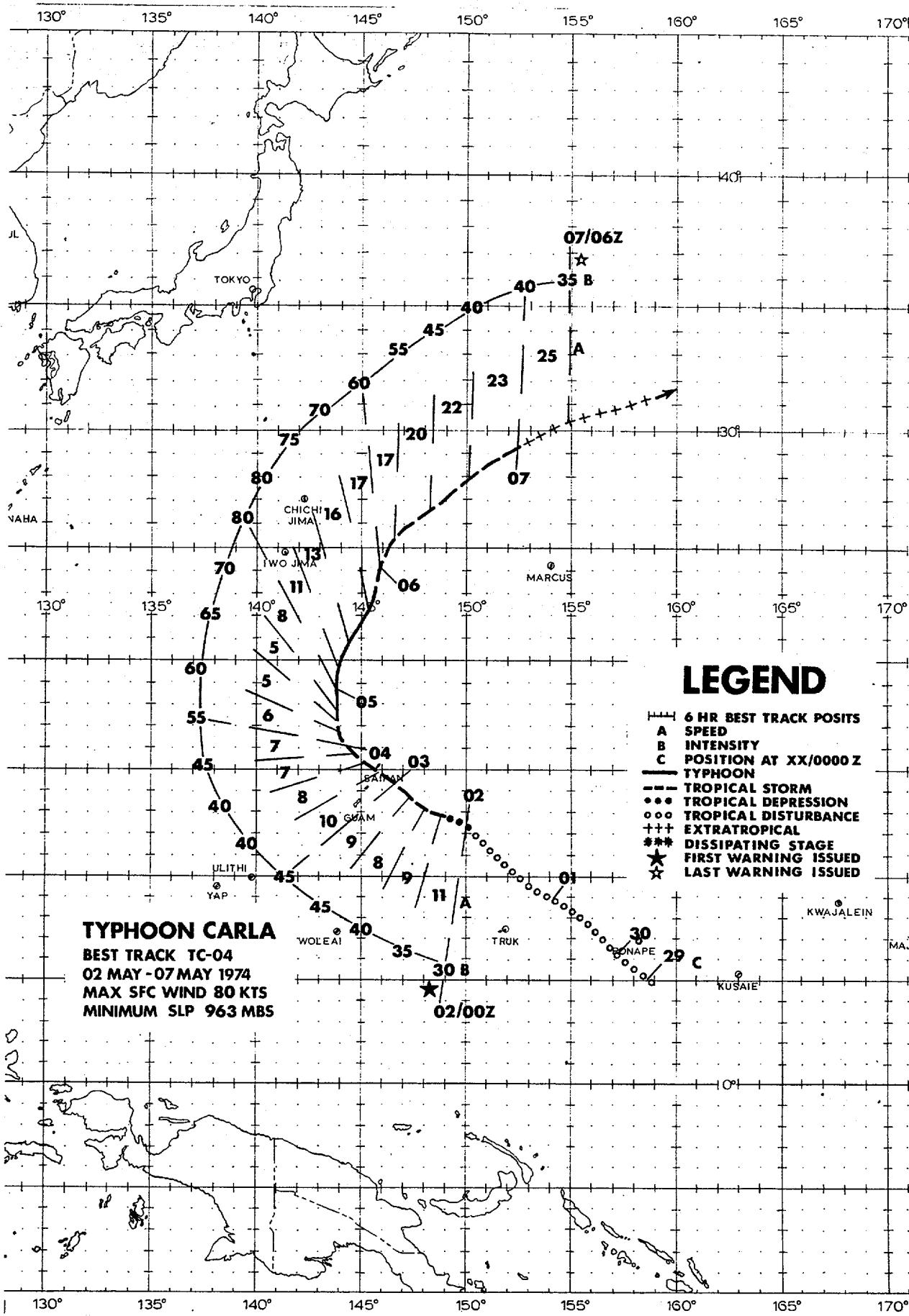


0° 105° 110° 115° 120° 125° 130° 135° 140° 145° 150° 155° 160° 165° 170°

### WESTERN NORTH PACIFIC TROPICAL STORMS OF 1974 ≥ 50 KNOTS

WANDA	10 JAN - 13 JAN
BABE	28 APR - 02 MAY
EMMA	13 JUN - 18 JUN
KIM	23 JUL - 24 JUL
NADINE	15 AUG - 18 AUG
ROSE	28 AUG - 31 AUG
WENDY	24 SEP - 30 SEP
FAYE	01 NOV - 04 NOV





## 2. INDIVIDUAL TYPHOONS

### CARLA

In late April, the monsoon trough became active in the central Carolines, producing a tropical depression that later became Tropical Storm Babe. Shortly thereafter, another circulation in the trough near Ponape was noted on 29 April. The system tracked northwestward during the next three days, its development aided by the upper level outflow of Babe tracking north of the Marianas. By 2 May, the circulation located about 225 miles southwest of Saipan, had developed into Tropical Storm Carla (Figure 4-1).

Continuing a northwest track, Carla's center crossed Tinian in the south central Marianas about 0800Z on the 3rd. The U.S. Coast Guard Loran Station on southern Saipan (located a few miles to the north of the center) recorded a peak gust of 57 knots within an hour after passage of the center. The maximum 24-hour rainfall recorded on Saipan during passage was 2.63 inches.

With a mid-tropospheric long wave trough situated between 130 and 135 E, Carla began to turn poleward late on the 3rd. As Carla tracked west of the northern Marianas by some 100 nm on the 4th, aircraft reconnaissance indicated Carla's pressure had fallen to 978 mb and maximum winds around its center neared 65 kts. By 1200Z on the 4th, Carla became the season's first typhoon (Figure 4-2).

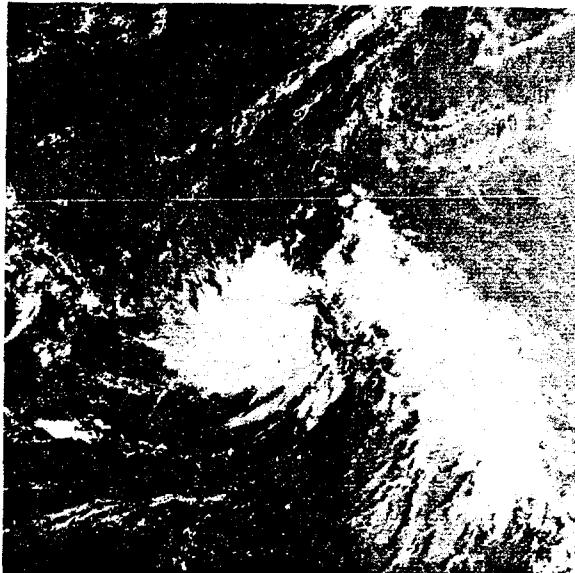


FIGURE 4-1. Carla prior to attaining tropical storm intensity 300nm southeast of Saipan, 1 May 1974, 2236Z. (DMSP imagery)

The heavy rains and gusty winds brought by Carla to the Marianas took a heavy toll on fruit crops (bananas, citrus, etc.). Rota, Tinian, and Saipan reported 95% damage to crops while Pagan and Agrihan in the northern Marianas reported 45% damage.

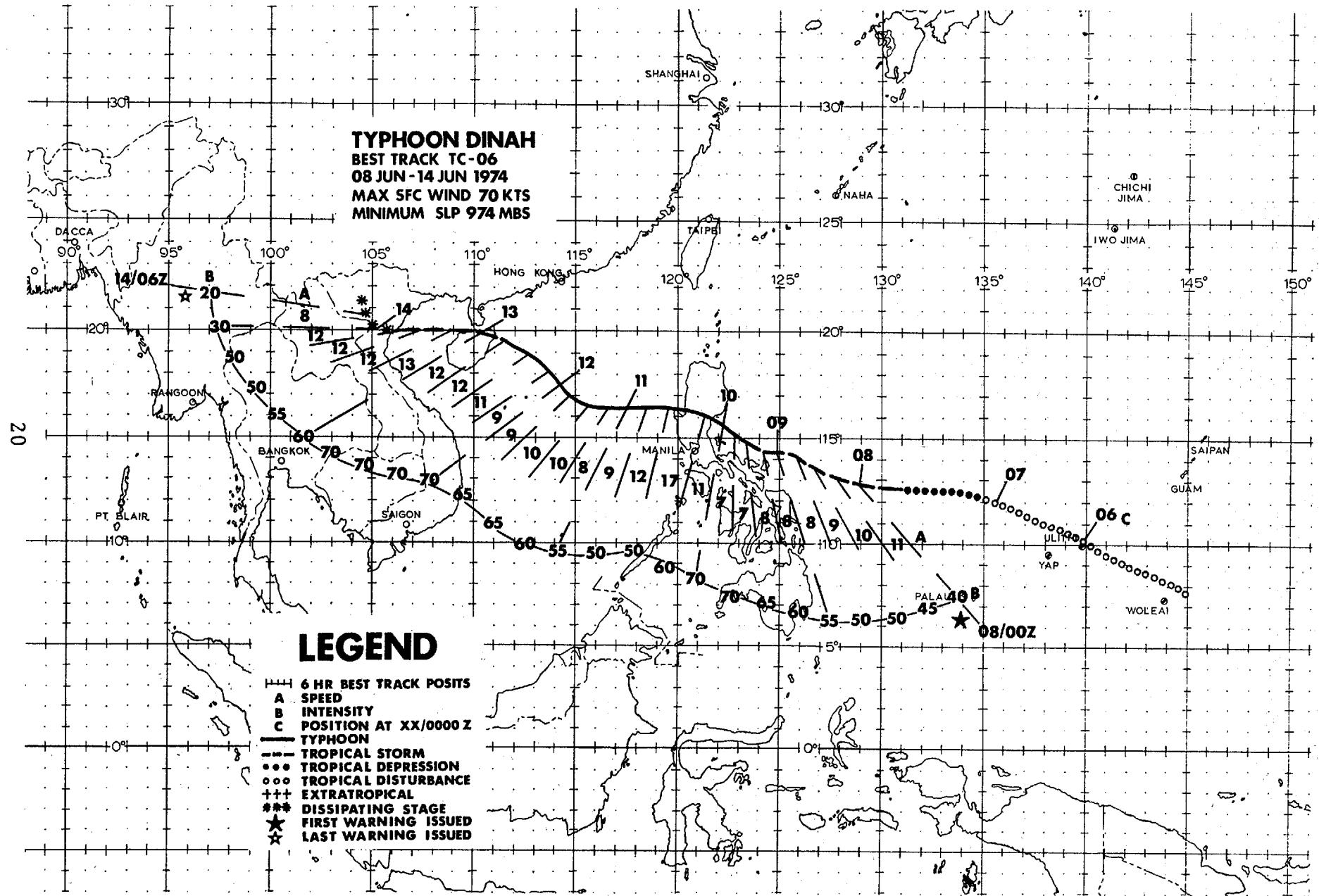
Carla continued to deepen on the 5th while tracking northward. Reconnaissance aircraft measurements indicated peak intensity was attained early in the day southwest of the Maug Islands as Carla's central pressure dipped to 963 mb. Maximum sustained surface winds (1 min) were probably close to 80-85 knots near the eye at this time.

Increasing tropospheric shear began to weaken Carla after passage north of the 20th parallel as the cyclone approached the base of the mid-tropospheric westerlies. Twenty-four hours after reaching peak intensity, Carla was reduced to tropical storm intensity, 300 nm east of Iwo Jima.

In advance of a front moving southeastward from Japan, Carla began to accelerate northeastward on the 6th and fill in central pressure. By 1200Z, synoptic and satellite data indicated the remains of Carla had merged with the frontal zone as a weak low near 36N and 158E.



FIGURE 4-2. Carla achieving typhoon intensity 210nm northwest of Saipan, 5 May 1974, 0205Z. (DMSP imagery)



Dinah's incipient stages can be traced back to a weak circulation in the monsoon trough first noted on synoptic charts on 5 June in the west central Carolines. The system tracked west-northwestward passing just north of Ulithi atoll early on the 6th reaching tropical depression status the next day (Figure 4-3). As a strong subtropical ridge built westward, the depression crossed the Philippine Sea at a rapid pace up to 20 knots. On the 8th, it began to slow in forward speed and intensify about 200 nm east of Samar Island.

Following somewhat of a meandering course Dinah passed just north of Catan-duanes Island on the 9th and veered temporarily to a northwest track in response to a short wave trough over the East China Sea. Aircraft reconnaissance indicated that Dinah had developed typhoon force winds in its northern semicircle during this period. An aircraft measurement shortly before landfall indicated a central pressure of 974 mb (10/0235Z) the lowest observed during the cyclone's lifetime. At landfall, the coastal town of Baler (15 nm south of the center) reported a minimum pressure of 979.8 mb and gusts to 46 knots while Casiguran 35 nm north of the center measured a gust to 47 knots (Figure 4-4).

Dinah cut across Luzon's mountainous terrain in less than 6 hours emerging north of the Lingayen Gulf near the town of San Fernando. Torrential rains (24 hour totals up to 19.4 inches at Virac and 15.4 inches at Baler) set off flash flooding and landslides in the island Republic claiming a toll of 73 dead and 33 missing. Estimates of damage caused by Dinah were approximately \$1 million.

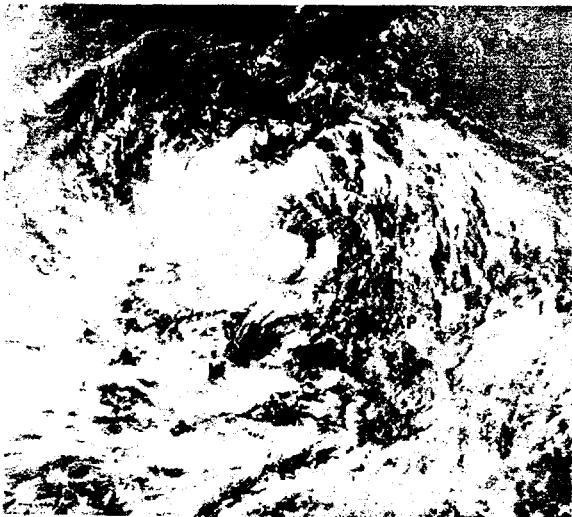


FIGURE 4-3. Formative stages of Dinah centered 200nm northwest of Yap, 6 June 1974, 2330Z. [DMSP imagery]

Dinah assumed a westerly course after exiting Luzon regaining typhoon strength by midday on the 11th. Aircraft reconnaissance reported a central pressure of 978 mb (11/0855Z) within a broad center estimated to be 50 nm in diameter. The Japanese ship MATSUSHIMA MARU passed about 40 nm east of the center a few hours later (11/1200Z) reporting a minimum pressure of 980.8 mbs. Dinah's central pressure varied little thereafter, and its center remained broad until landfall on Hainan Island.

As a high pressure region over South China advanced into the East China Sea, Dinah shifted course for the Luichow peninsula on the 12th. Rebuilding pressures, however, blocked Dinah from crossing the South China coast. Following transit of northern Hainan Island, Dinah weakened to tropical storm strength and entered North Vietnam south of Haiphong quickly dissipating once inland.

While in the South China Sea, Dinah's circulation was extensive; radius of the area within the 1000 mb isobar was about 360 nm by the 11th. On this day, Pratas Island 150 nm north of the center reported sustained winds (10 min) of 30 knots (11/1200Z), and the Japanese ship NISSHO MARU 125 nm east of the center reported estimated winds of 45 knots. By the 12th, an unidentified ship caught 60 nm north of the center reported estimated winds of 45 knots (12/0000Z). Later that day, the Chinese meteorological station on the Paracel Islands 120 nm south of the center recorded sustained winds (10 min) of 45 knots. Strong gusty winds were also felt in Hong Kong on the 12th as the eye of Dinah passed some 250 to 200 nm south and southwest. Wagland Island in the Colony reported gusts up to 60 knots and the Royal Observatory gusts to 64 knots.

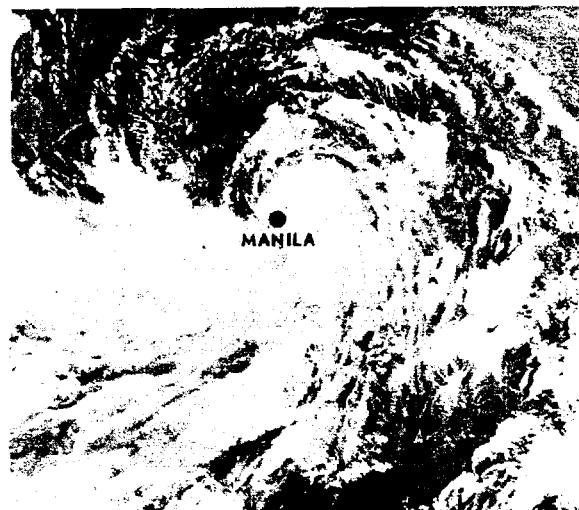
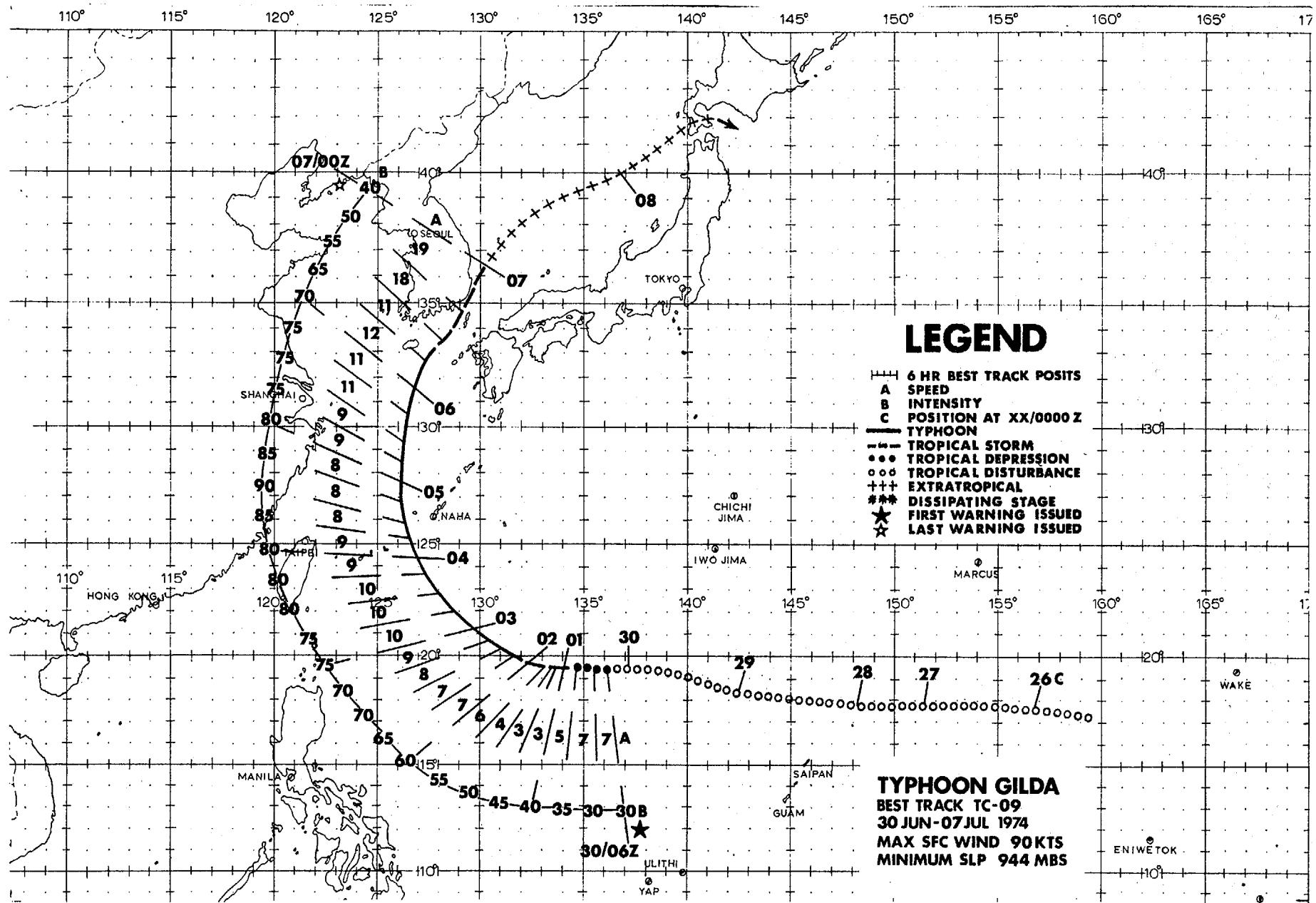


FIGURE 4-4. Typhoon Dinah a few hours from landfall on Luzon island near Baler, 10 June 1974, 0017Z. [DMSP imagery]

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The third typhoon of the season, Gilda, developed to typhoon strength 450 nm southeast of Okinawa on 2 July. Initial detection of the system was on 25 June about 400 nm north of Eniwetok as a weak circulation on the trailing edge of a surface trough which extended northeastward to the vicinity of Midway Island. The system tracked westward for five days displaying little marked development based on satellite data coverage. By the 29th, however, signs of increased organization became evident and, late the following day, Gilda's circulation had generated surface winds of tropical storm intensity.

Gilda began to move poleward on the 2nd and develop winds of typhoon strength as a stationary mid-tropospheric trough dominated eastern China. Early that day, the Japanese vessel SHINKYOKU MARU crossed southward just ahead of Gilda's path observing northwesterly winds of 45 knots and a pressure of 988.0 mb (02/0600Z).

The typhoon reached its peak intensity during the two-day period it approached the Ryukyu chain (Figure 4-5). Reconnaissance aircraft measured a 944 mb central pressure (04/1431Z) when the eye passed 70 nm southwest of Naha, Okinawa on the 4th. A peak gust of 85 knots was measured at the Naha Observatory (04/0840Z) during passage, while on Kume Jima a gust of 101 knots was registered several hours later (04/1550Z) when Gilda's eye passed 30 nm to the west.

Heavy rain and gusty winds from Gilda were responsible for almost a complete failure in Okinawa's electric power. Heavy rains (up to 10.8 inches at Naha) also accounted for numerous landslides and local

flooding. One person was reported killed and several fishing vessels sunk. Crops including sugarcane, bananas, and vegetables suffered extensive damage.

As the typhoon entered the East China Sea, it tracked northward around the western periphery of the mid-tropospheric subtropical ridge. Diminishing in intensity while approaching Cheju Do Island early on the 6th (Figure 4-6), Gilda responded to increasing upper level southwesterly flow over Manchuria, and began to accelerate. By the 7th, Gilda's circulation was in the Sea of Japan as an extratropical system heading toward southern Hokkaido.

Gilda brought torrential rains to Korea during passage near the southeast coast with total rainfall amounts exceeding 10 inches near coastal areas. The highest amount of 10.8 inches was measured at Kwangyang. The heavy rains caused flash flooding and landslides which completely or partially destroyed over 700 dwellings and left over 6000 homeless. Total damage loss was estimated at \$2.8 million, with casualties of 21 dead and 11 missing.

Meanwhile, Gilda's circulation activated a stationary front over western and central Japan producing torrential rains over a widespread area. The coastal town of Owase on the Kii peninsula reported an extreme 24 hour total of 16.5 inches. Newspaper reports indicated Gilda caused an estimated \$1.2 billion in property damage, including tens of thousands of flooded homes, damaged roads, and washed out railway lines and bridges. The toll in Japan from landslides and flash flooding accounted for 106 dead and 15 missing.

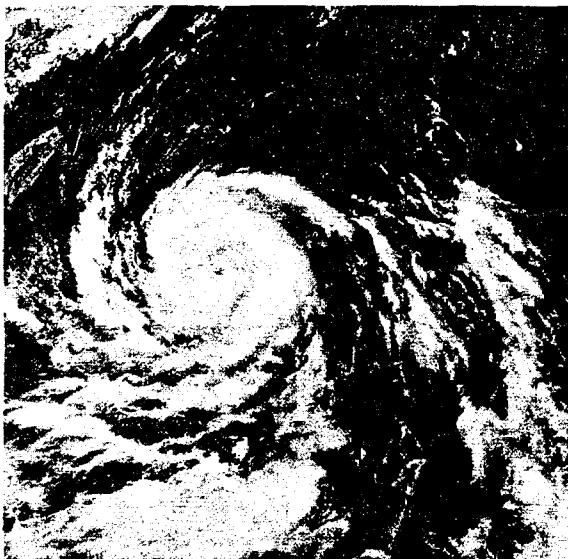


FIGURE 4-5. Typhoon Gilda near peak intensity 100nm southwest of Naha, Okinawa, 3 July 1974, 0227Z. (DMSP imagery)

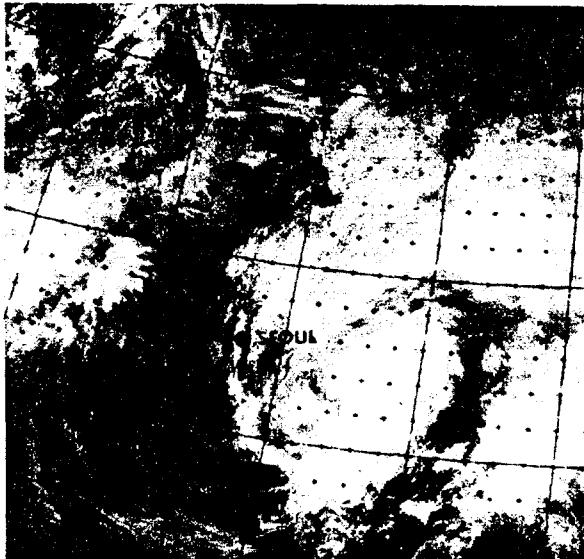
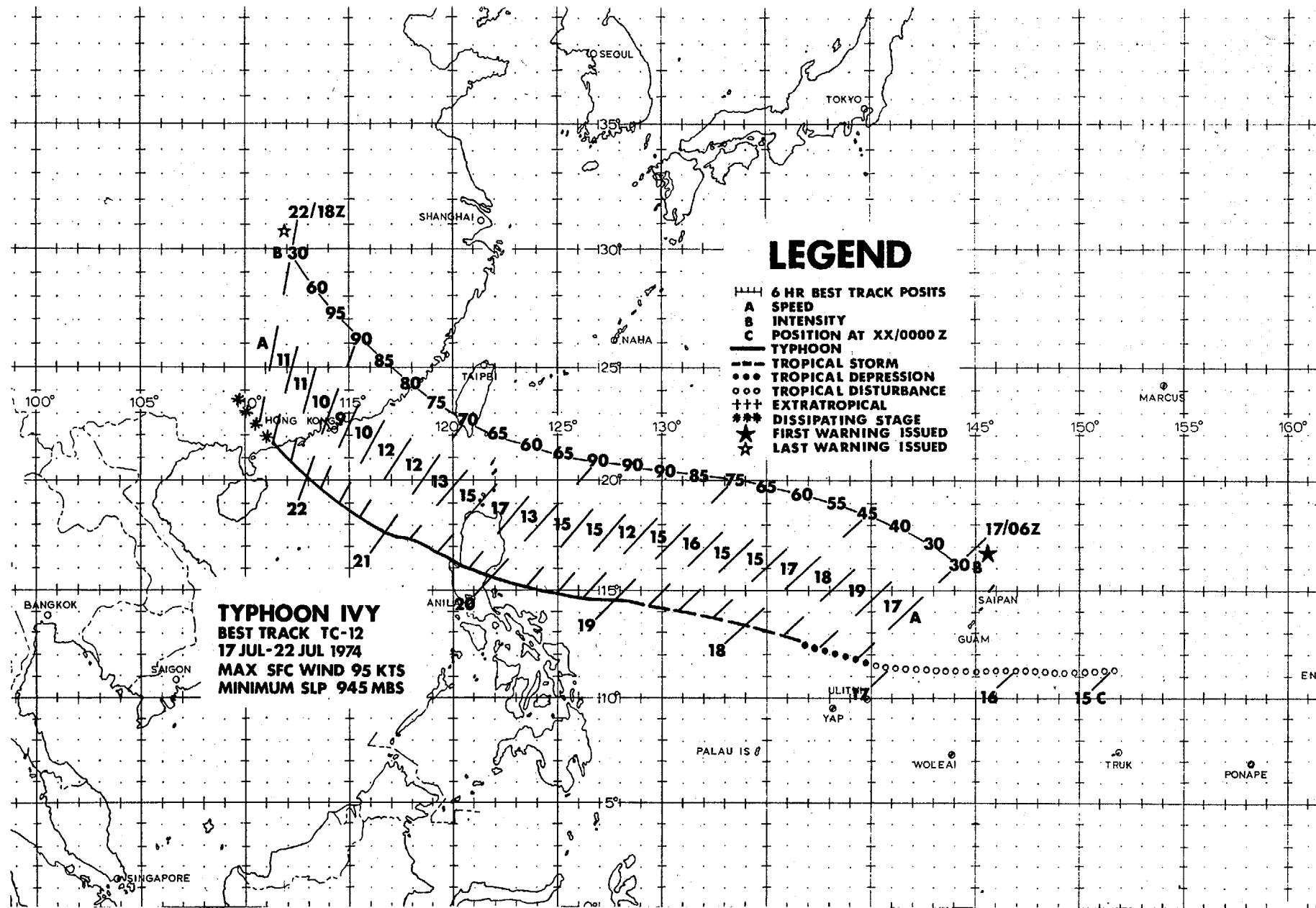


FIGURE 4-6. Typhoon Gilda acquiring extratropical characteristics in the Sea of Japan 180nm southeast of Seoul, Korea 7 July 1974, 0254Z. (DMSP imagery)

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The 0000Z synoptic chart for 17 July depicted multiple tropical cyclones over the Philippine Sea. Harriet was weakening to depression status east of Okinawa as Jean developed storm force winds east of the Luzon Straits. Meanwhile, evidence of a strengthening depression was noted in the monsoon trough 250 nm west-southwest of Guam. The last system, destined to become Ivy, intensified to tropical storm force the following day (18th) (Figure 4-7). Within two days, Ivy struck Luzon as a well developed typhoon.

Ivy's track across the Philippine Sea was affected by a strong subtropical ridge resulting in movement speeds of 15-18 knots. Once Tropical Storm Jean crossed into the East China Sea, the subtropical ridge built westward and prevented Typhoon Ivy from taking a climatological northwesterly track. Instead, the typhoon was forced to maintain a westward course near the 15th parallel. The typhoon began to deepen rapidly on the 18th. Its central pressure dropped 32 mb in 20 hours, reaching a minimum of 945 mb (19/1037z) about 15 hours prior to landfall. Filling slightly, Ivy struck the Luzon coast south of Baler with sustained winds of 90 knots early on the 20th. A peak gust of 97 knots from the east and a minimum pressure of 973 mb was reported at the Baler meteorological station during eye passage.

The severity of turbulence associated with Ivy prior to landfall on Luzon was readily attested to by an aircraft reconnaissance crew late on the 19th. During penetration of the wall cloud, turbulence was sufficient to flame out one of the WC-130's four engines. Fortunately, engine restart was accomplished by the crew while orbiting in the eye.

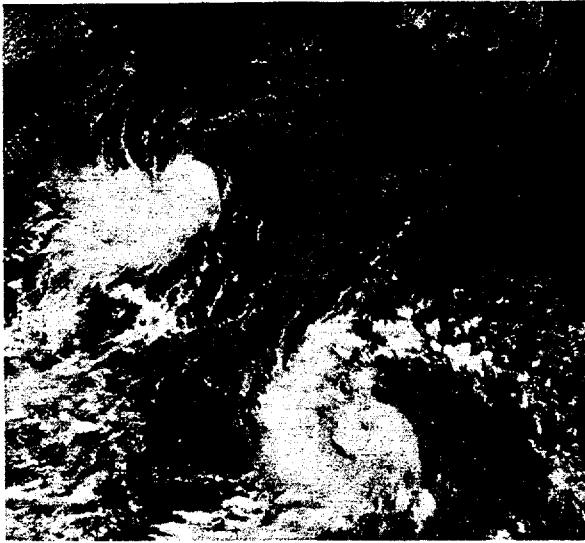


FIGURE 4-7. Tropical Storm Ivy about 450 nm east of Samar Island. Tropical Storm Jean is seen approaching Taiwan, 18 July 1974, 0253Z. (DMSP imagery)

After crossing central Luzon, Ivy emerged into the South China Sea from the Lingayen Gulf quickly regaining typhoon strength lost during transit over the mountainous terrain. In response to a mid-tropospheric trough positioned just east of the Tibetan Plateau, Ivy began to take a more northward course gradually slowing in forward speed and re-intensifying as it approached South China (Figure 4-8). Estimates based on satellite data indicated that prior to landfall (just east of the Luichow peninsula on the 22nd) maximum sustained winds near the center were probably in the 85-95 knot range.

The circulation of Ivy caused gale force gusts at Hong Kong as she passed 150 nm south of the Colony. Peak gusts of 63 knots and 55 knots were recorded on the exposed islands of Cheung Chau and Waglan Island, respectively. Maximum 24-hour rainfall was relatively light at the Royal Observatory with only 1.4 inches recorded on the 22nd. Ivy's circulation quickly lost identity after moving inland midway through the 22nd and the system disappeared from the surface analysis 24 hours later.

In the Philippines, the typhoon's casualty aftermath mounted to 66 persons with 46 of these listed as missing. Hardest hit by Ivy was Baler, a town of 15,000, in which newspaper reports indicated 50% of the houses were leveled. Also in the Polillo Island group in Lamon Bay, 42 fisherman were reported lost following Ivy's passage. Estimates of dollar damage to structures, crops, and livestock in Luzon were placed at \$2 million.

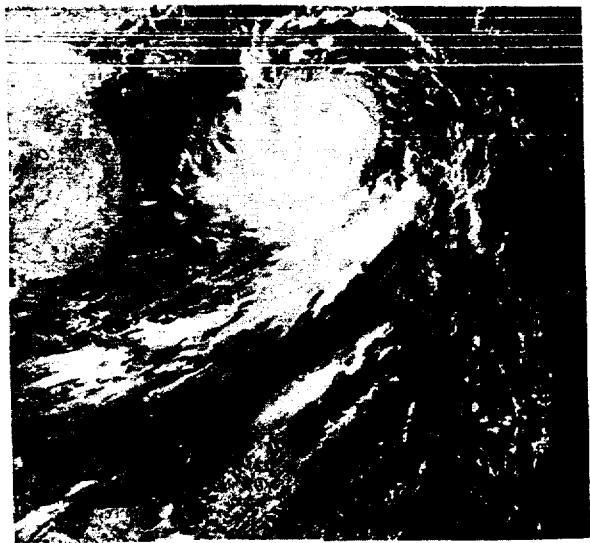
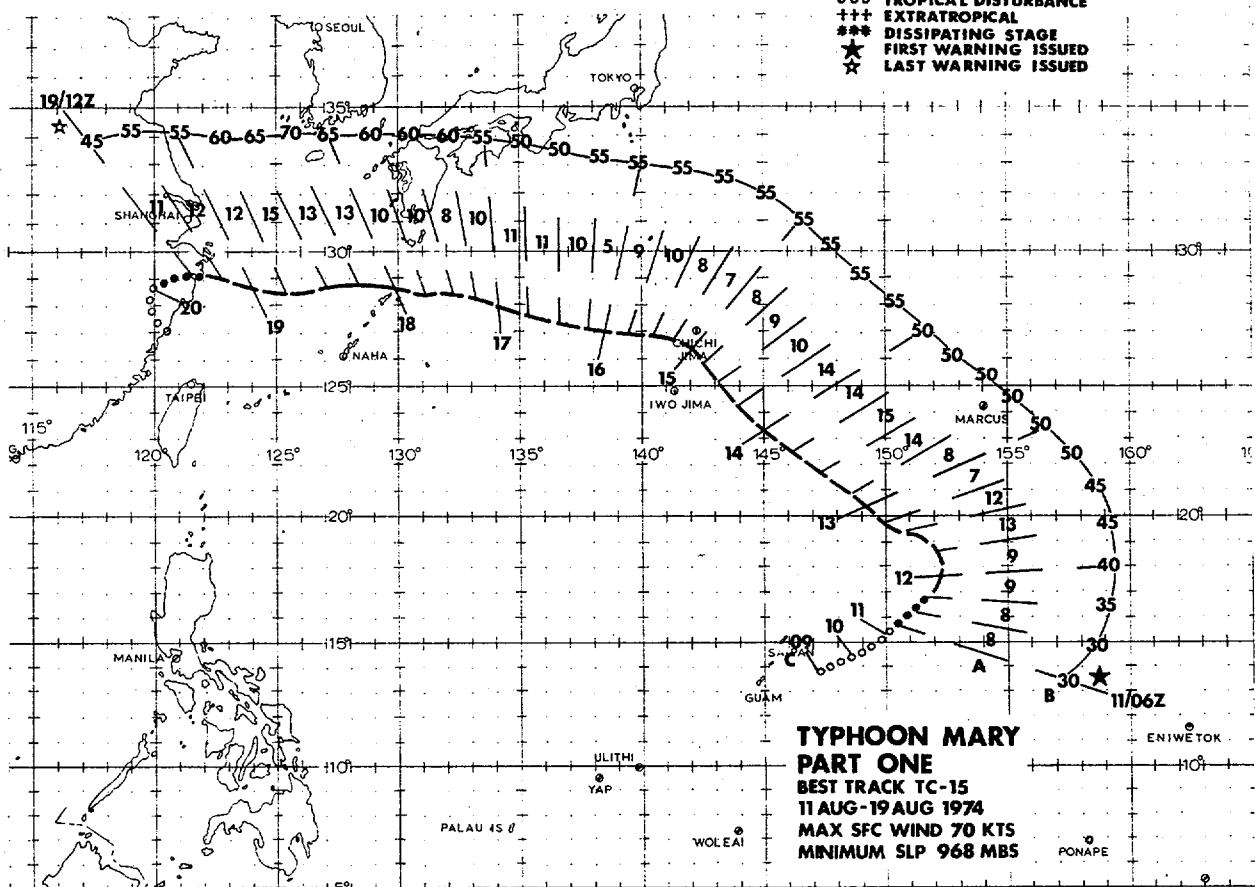
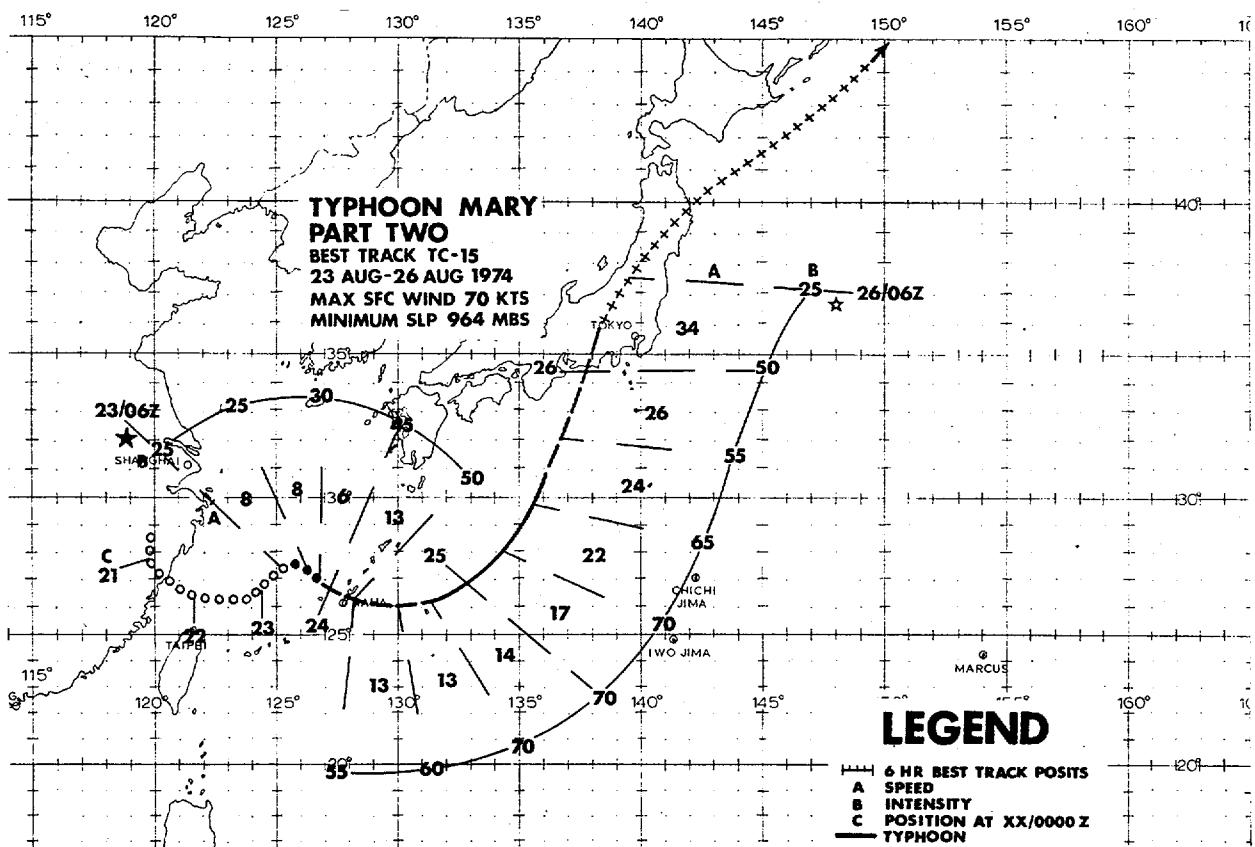


FIGURE 4-8. Typhoon Ivy in the South China Sea 250 nm south of Hong Kong, 21 July 1974, 0339Z. (DMSP imagery)



B5  
T-1

From its early stages east of the Marianas, to final dissipation over Japan, Mary's behavior was atypical of a tropical cyclone. Mary's circulation during the early stages was marked by maximum wind bands removed from the center by several hundred miles. In addition, the storm's circulation reached enormous proportions, dominating the weather events over the entire Philippine Sea for several days. The longest lived tropical cyclone of the season, Mary persisted for 15 days with 2 1/2 of these days spent inland from the East China coast. Toward the end of its lifetime, Mary culminated its unusual behavior by defying climatology, leaving the East China coast on an easterly heading, and regenerating to typhoon strength.

First identified as a weak circulation on synoptic surface charts on 9 August, Mary developed to depression status by the 11th in the monsoon trough some 250 nm east of Saipan. It is significant that during this period surface pressure falls to 5 mb below normal were occurring along the trough across the Philippine Sea. As a result, the monsoon westerlies began to intensify producing a narrow belt of winds averaging 25-30 knots feeding into the depression. By the 11th, satellite data revealed a band of cloudiness extending from the Philippine archipelago to the eastern Carolines in response to the strengthening monsoon flow (Figure 4-9).

Initially moving northeastward, Mary's circulation began to generate winds of tropical storm force late on the 11th. Thereafter, the storm shifted to a northwest course abruptly accelerating in forward speed to 14 knots on the 13th. Mary's circulation was characterized during this period by the existence of maximum wind bands far removed from the low pressure center. Reconnaissance aircraft reports on the 11th and 12th indicated that the center was becoming increasingly separated from the associated convective cloudiness. By the 13th, the center was 200 nm from the nearest convective band. The dimensions of the anomalous structure was readily apparent in satellite views on the 14th (Figure 4-10). By this time a band of convective cloudiness spiraling around the center in a broad arc was evident--a pattern quite similar to an extratropical low.

As Mary's center took a poleward component on the 12th and 13th, the associated convective band leading into the circulation, and trailing some 500 nm south and southwest of the center, drifted over Guam. Winds gusting to gale force occurred over a period of 3 days starting early on the 11th. Peak gusts from the southwest reached 57 knots on the 12th (0950Z) and the 13th (2012Z) at Andersen AFB. Rainfall amounts of 7.25 inches in 24 hours were recorded at Andersen AFB between the 11th and 12th as the island lay beneath Mary's outer convective band. This extreme 24-hour rainfall amount exceeds all records for August on Guam.

The persistent strong southwesterly winds were responsible for significant damage to marine interests on Guam. The CARIBIA, a 40,000 ton passenger liner, being towed to Taiwan for salvage, broke loose from her tug at the entrance to Apra Harbor, ran aground on the breakwater, and later sank. An estimated \$3.3 million loss was associated with the sinking of this vessel. The heavy seas also took their toll on small craft (which are normally protected on the leeward side of the island in the trades) as many broke their moorings and went aground. One yacht valued at \$250,000 was included among the lost vessels. Two lives were lost due to drowning and damage estimates amounted to over \$542,000 in the Territory.

On Rota, Tinian, and Saipan crops were especially hard hit by the strong winds and torrential rains. On Tinian, the vessel MV MARIANAS broke from its moorings and went aground. In the northern Marianas, major damage was sustained mostly to copra and banana trees.

As Mary neared the Volcano Islands, the area of surface pressure of 1000 mb or less was exceedingly large--stretching at its greatest diameter some 1200 nm in a north-northeast/south-southwest orientation and 850 nm in an east-west direction. The unusually low pressures in the trough trailing Mary southwestward into the Philippine Sea caused development of a tropical depression some 350 nm north-northwest of Yap. Moving eastward in Mary's circulation, the depression apparently interacted with the tropical storm midday of the 14th when it approached within 700 nm of Mary's center. Mary's forward motion began to slow and the storm abruptly shifted to a westerly course early on the 15th. Meanwhile the strong tropical depression accelerated in forward speed around Mary's southeastern side and dissipated due to the excessive vertical shear.

Late on the 14th the center of Mary's broad eye crossed 35 nm south of Chichi Jima. The island's meteorological station reported a minimum pressure of 977.1 mb (14/2240Z)--only slightly higher than an aircraft reconnaissance central pressure observation a few hours later (972 mb at 15/0217Z).

On the 15th, a second depression was spawned 300 nm east of Luzon in the low pressure envelope trailing Mary. Accelerating eastward in Mary's circulation, Nadine developed to tropical storm force late on that day. Once Nadine was within 700 nm of Mary's center late on the 15th a second interaction occurred, resulting in Mary's continued westward movement (Figure 4-11).

A long wave mid-tropospheric trough west of Lake Baykal began to deepen on the 16th resulting in a rapid building of a ridge downstream over Manchuria with a high pressure cell centered near Port Arthur. This abnormally strong high blocked any further poleward movement and caused Mary to maintain an anomalous westward course until landfall

on the East China coast on the 19th.

During this westward movement, satellite data indicated that Mary developed a more tropical appearance as a canopy of cloudiness covered the cyclone's center. Mary intensified slightly, and for a short period on the 18th winds reached typhoon force as the storm cut through the Ryukyu chain (Figure 4-12). Naze city on Amami-O-Shima reported the lowest pressure (979.6 mb at 18/0240Z) as Mary's center tracked 20 nm to the north. The highest winds in the Ryukyus were measured at Yakushima Island which recorded a peak gust of 90 knots at 18/0040Z. As the typhoon's precipitation swept over southern Kyushu, heavy rainfall amounts varying between 8 and 11 inches were reported in the mountainous areas. Miyakonjo on Kyushu measured the greatest 24 hour total of 6.4 inches during the 18th.

Moving inland on the China coast about 100 nm south of Shanghai late on the 19th, Mary was blocked from moving into the mountainous interior by a high cell over central China. As a result, Mary stalled just inland as a deep depression for several days. Meanwhile, the mid-tropospheric ridge over Manchuria began to break down rapidly as a developing mid-tropospheric trough east of Lake Baykal begin to deepen equatorwards.

By the 22nd, the increasing westerly flow west of and over the Gulf of Chihli forced the depression back out over the open waters of the East China Sea.

Regenerating to minimum storm strength on the 23rd, Mary passed over Okinawa as a "back door" storm early on the 24th increasing in forward speed to 13 knots during crossing. The meteorological station at Kadena Air Base registered a minimum pressure of 981 mb (24/0105Z) and a peak gust from the northwest at 41 knots. Center passage was estimated 18 nm to the north of Kadena. At the Naha Observatory a peak gust of 58 knots (24/0330Z) was recorded. Later in the day, Mary passed just north of Minami Daito Jima as the storm achieved typhoon intensity. The

Japanese weather station on the island experienced a peak gust of 90 knots (24/1707Z) and a minimum pressure of 969.3 mb (24/1704Z).

The development of a low within a mid-tropospheric trough over Korea began to draw Mary on a northward course late on the 24th. Due to the tightening gradient over Japan created by this deepening trough and a subtropical ridge cell positioned east of Honshu, Mary accelerated north-northeastward reaching a forward speed of 26 knots prior to striking Honshu near Hamamatsu on the 26th.

Mary briefly maintained typhoon status on the 25th, although the cyclone's winds dropped to storm strength prior to landfall on Honshu. Further evidence of Mary's rejuvenation came from aircraft reconnaissance late on the 24th observing a 15 mb drop in 24 hrs to 964 mb (24/2141Z). Several hours later the British vessel W. C. VAN HORNE was caught near the eye of the typhoon while crossing 30 nm east of the center. Winds of 70 knots from the south and a pressure of 981.8 mb were reported from this vessel at 25/0600Z. Crossing the Japanese coastline near Hamamatsu, the meteorological station indicated Mary's central pressure had risen to 986.2 mb (26/0030Z). Thirty minutes prior to center passage a peak gust of 63 knots was recorded at the station. Elsewhere along the coast, Omaezaki reported a southerly gust of 69 knots (26/0050Z).

Merging with a frontal system over Japan, Mary became extratropical moving inland over Honshu early on the 26th. Heavy rains spread over the north central region of the island with the greatest 24 hour amount of 8.98 inches occurring at Nikko. On the southern coast, Shizuoka City recorded a 24 hour total of 6 inches.

Only one casualty occurred in the Japanese islands as a result of Mary; however, strong winds associated with Mary over the Sea of Japan were responsible for capsizing a fishing trawler off Cape Amasaki. Of a crew of eleven, only one was rescued.

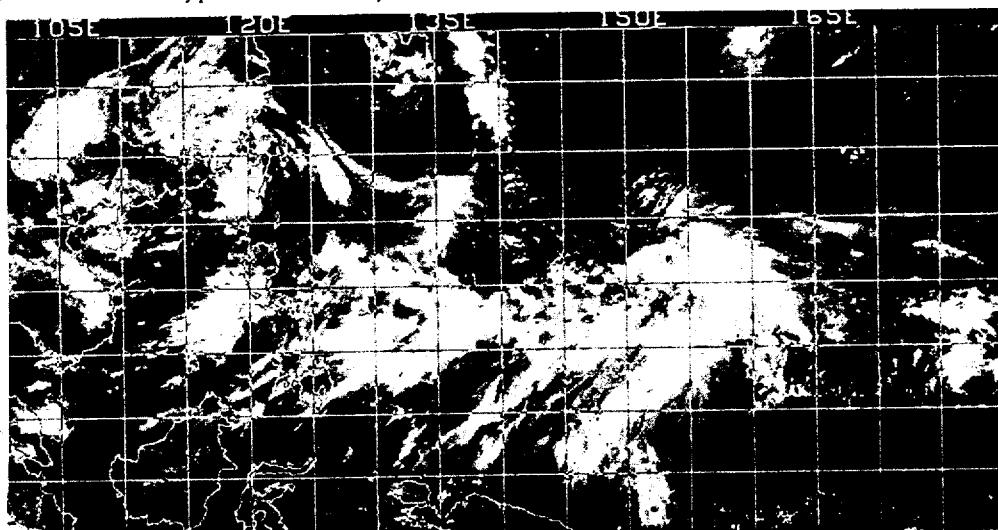


FIGURE 4-9. NOAA-2 satellite mosaic for 11 August 1974 showing cloud band associated with southwest monsoon extending from the Philippines to Mary developing east of the Marianas.



FIGURE 4-10. Tropical Storm Mary appearing as an extratropical system centered 220 nm southeast of Iwo Jima, 14 August 1974, 0118Z. (DMSP imagery)

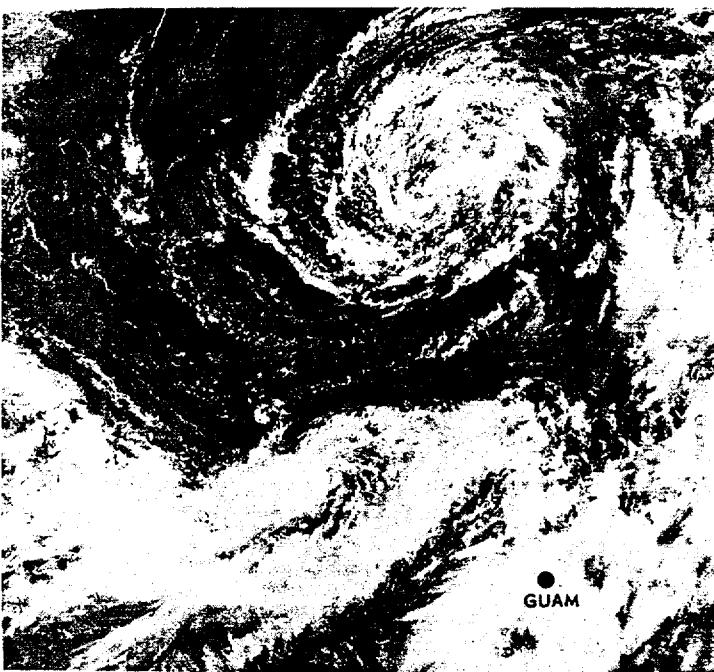
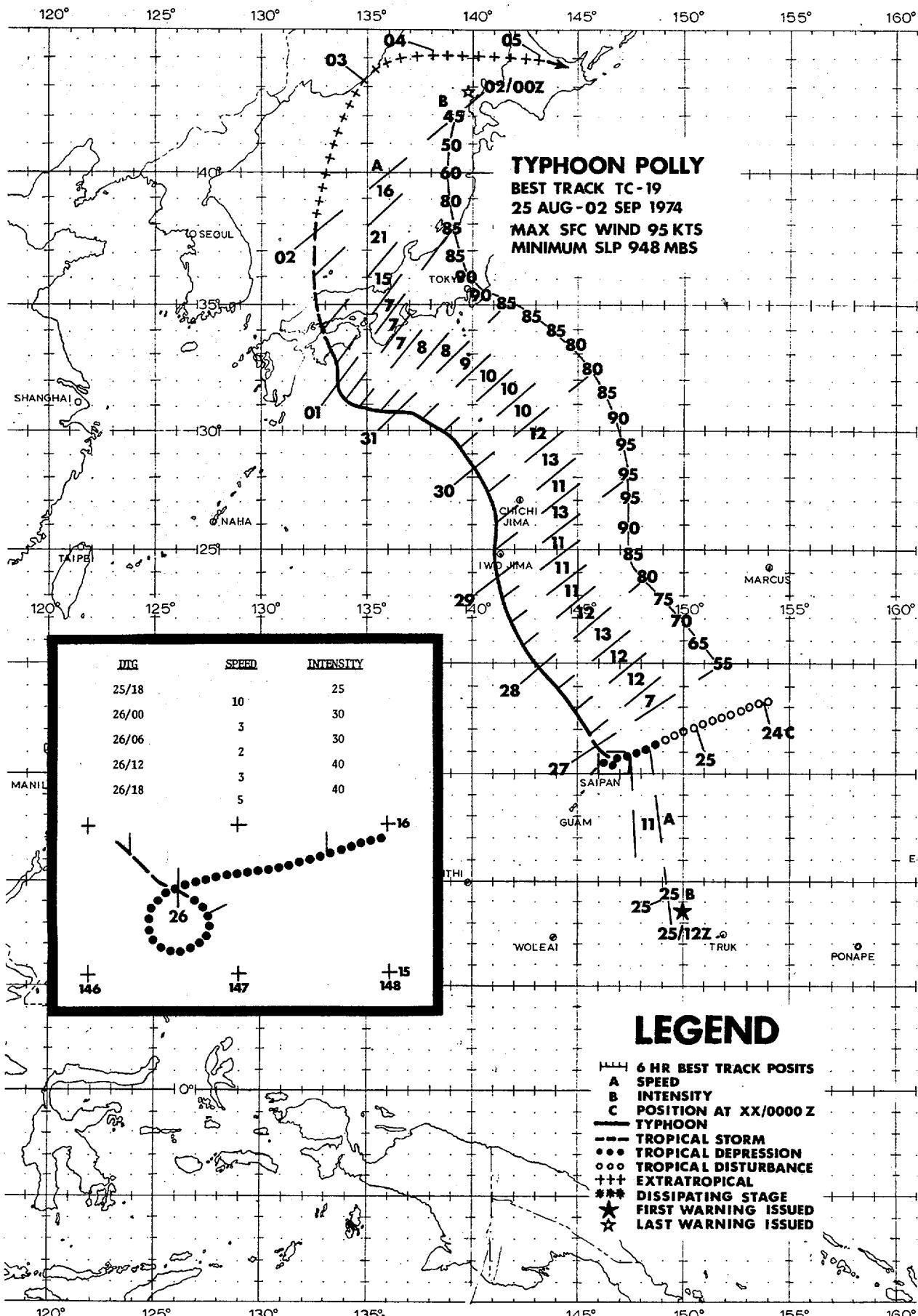


FIGURE 4-11. Tropical Storm Mary (top) centered 550 nm south of Tokyo. Tropical Storm Nadine (bottom) 700 nm further south in the Philippine Sea is centered 400 nm north of Yap Island, 16 August 1974, 0223Z. (DMSP imagery)



FIGURE 4-12. Mary after reaching typhoon force centered 100 nm north of Naha, Okinawa, 18 August 1974, 0327Z. (DMSP imagery)



## POLLY

While Mary was accelerating toward central Honshu, satellite data revealed another disturbance, induced from an upper level low, was showing signs of development 400 nm east of the northern Marianas. Midday on the 26th, the circulation system intensified into Tropical Storm Polly about 40 nm northeast of Saipan. Development was rapid thereafter, as the storm's central pressure dropped 25 mb in a period of a day after an aircraft reconnaissance reading of 989 mb late on 26th (2056Z).

Polly's movement in the central Marianas was erratic as the storm was impeded by a high pressure cell located to the southwest near Yap. By the 27th, however, the flow about a strong high east of Japan dominated, and Polly departed the "col" region between the two anticyclones increasing in forward speed to 12 knots.

Veering northward late on the 28th, the typhoon took aim on the Volcano Islands. Polly's central pressure continued to fall terminating at a minimum value of 948 mb 170 nm south of Iwo Jima. Twelve hours later the typhoon passed abeam of Iwo Jima and later on the 29th passed about 70 nm west of Chichi Jima. Iwo Jima reported peak gusts of 108 knots from the south (29/0705Z) after the eastern edge of Polly's 20 nm diameter eye passed the island. A minimum pressure of 951.5 mb was registered while in the eye. Later, Chichi Jima recorded a peak gust of 88 knots from the east-northeast (29/1240Z) and a minimum pressure of 989.8 mb (29/1900Z) during passage.

During Polly's advancement northward from the Marianas, Tropical Storm Rose generated east of Taiwan. Late on the 29th, Rose had moved to a position just north of Okinawa, and become quasistationary. The proximity of Tropical Storm Rose 700 nm west of Polly and a blocking high north and northeast of Polly resulted in the beginning of a Fujiwara interaction on the 30th. Polly began to turn northwest to westward during the next day and a half, as Rose sped around the south side of Polly's circulation (Figure 4-13).

With a long wave trough over eastern China, and Rose weakening significantly on Polly's eastern periphery, the typhoon veered abruptly on a northward track late on the 31st. Increasing in forward speed to 15 knots, Polly's center struck the Japanese islands of Shikoku and southwestern Honshu, emerging six hours later in the Sea of Japan late on the 1st. Diminishing to tropical storm force in the Sea of Japan, Polly continued a poleward movement crossing the Russian coast east of Vladivostok as an extratropical low on the 2nd.

As Polly's eye moved ashore on Shikoku, the Kochi City meteorological station 20 nm east of center, measured a minimum pressure of 976.3 mb (01/0920Z), and a peak gust from the east at 78 knots (01/0930Z). The Ashizuri station (20 nm west of the center), however, reported the lowest pressure on the coast--966.5 mb (01/0740Z). Murotomisaki

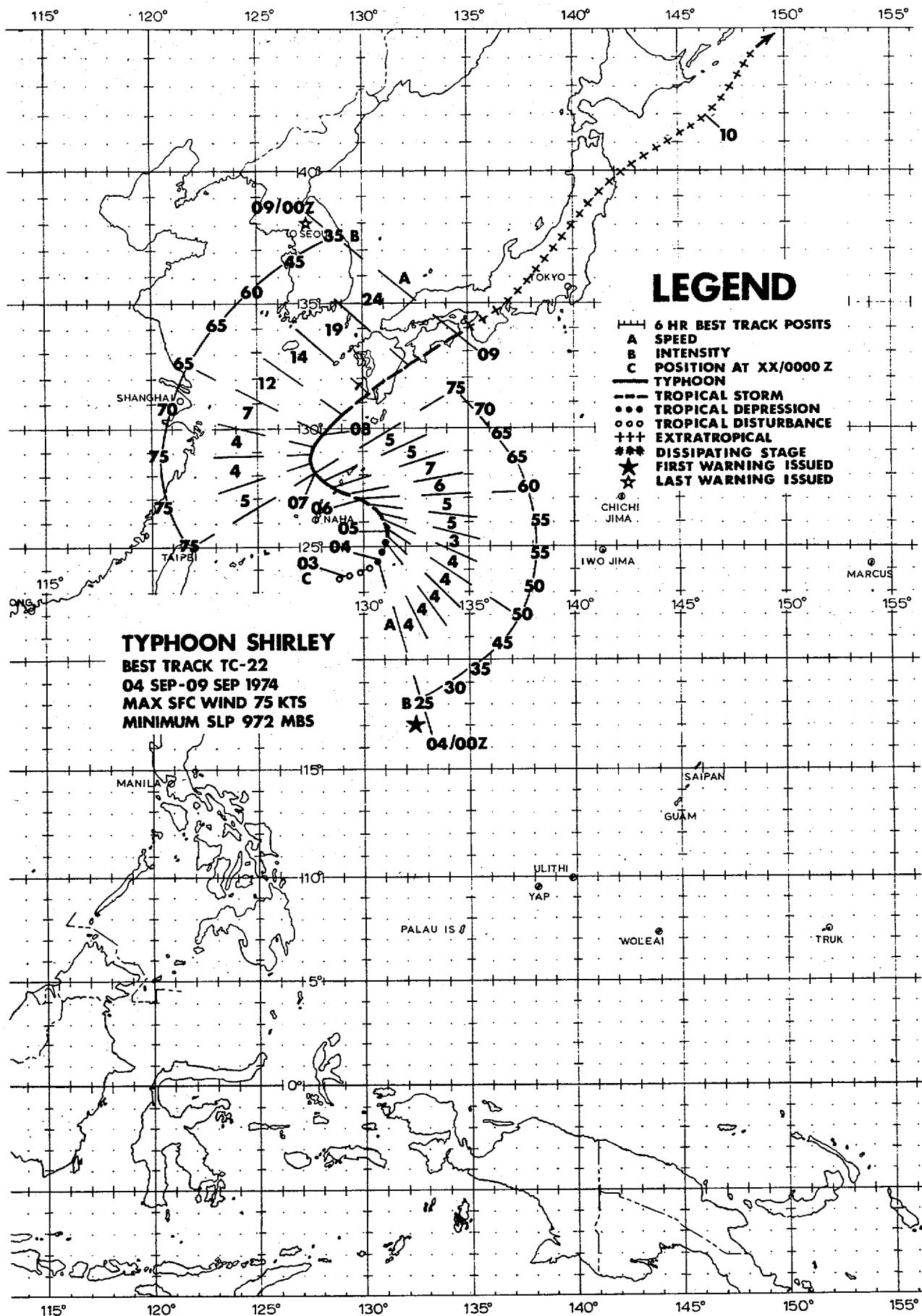
(elev. 745 ft, 70 nm northeast of the center) reported the highest gust--95 knots from the east (01/0310Z)--several hours before Polly's landfall. Maximum 24-hour rainfall measured on Shikoku Island due to Polly was 11.8 inches at the coastal station of Ashizuri.

During the typhoon's passage across Japan, Polly's circulation intensified a stationary front over east central Honshu bringing excessively heavy rains to the mountainous area west of the Kanto plain. Ogochi, Tokyo prefecture reported a total of 19.7 inches during the typhoon's passage while stations in Saitama and Yamanashi prefectures received totals as high as 19.5 inches and 14.4 inches respectively. These heavy rains set off one of the worst floods in Tokyo since World War II. The swollen Tama River washed over its embankment at Komae, Tokyo prefecture flooding many homes and causing 7600 inhabitants to be evacuated from their homes.

Elsewhere, electrical power was cut off in Kochi and Hiroshima in the path of Polly's center due to the high winds and landslides downing power lines. On the coast, two 10,000 ton freighters, berthed under construction at Urato Bay near Kochi, were washed out to sea when the water level went up some 9 feet. In the typhoon's wake, Polly left over 10,000 homes destroyed or inundated and a casualty toll of 45 injured and 9 dead or missing.



FIGURE 4-13. Typhoon Polly 250 nm south of Nagoya, Japan. Tropical Storm Rose appears further southwest of Polly centered 230 nm east of Naha, Okinawa. 30 August 1974, 2300Z. [DMSP imagery]



## SHIRLEY

As Polly transformed to an extratropical cyclone in the Sea of Japan, the monsoon trough reformed across the Philippine Sea from Taiwan to the Volcano Islands. On 3 September, a tropical cyclone was evident in synoptic and satellite data about 150 nm south of Okinawa. Drifting east and northeastward, Shirley was located about 60 nm south of Minami Daito Jima on the 4th when aircraft reconnaissance reports observed winds reaching storm force in the circulation's northern semicircle (Figure 4-14).

Located at the base of an upper level trough east of Korea, Shirley drifted slowly northward passing abeam of Minami Daito Jima early on the 5th. A minimum barometric reading of 986.0 mb was recorded at the island's weather station (05/0300Z). Peak gusts out of the south measured 54 knots (05/1300Z).

As the 500-mb trough over the Sea of Japan moved eastward on the 5th, rising heights north of Shirley caused the storm to turn westward. By the 6th, aircraft reconnaissance of Shirley indicated winds had reached typhoon force shortly before the storm's center passed over the island of Okinoerabu-Shima in the Ryukyu chain. (Figure 4-15) The barometer dipped to 977.4 mb on the island during center passage (06/1130Z), and, as winds shifted to the south-southeast, a peak gust of 82 knots was recorded (06/1310Z).

Shirley's circulation was rather small as gale force winds were limited to a radius of 75 nm of the center. To the north, Naze on Amami-O-Shima reported peak gusts to 43 knots (07/0150Z), while to the south the gust recorder at the Naha Observatory measured 44 knots (06/1530Z).

An approaching short wave over the

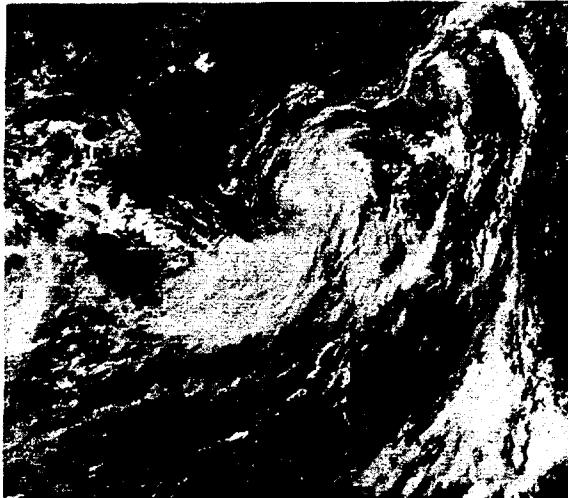


FIGURE 4-14. Formative stages of Shirley centered 180 nm southeast of Naha, Okinawa, 3 September 1974, 2329. (DMSP imagery)

Yellow Sea began to draw Shirley on a slow poleward drift on the 7th. As the base of this trough by-passed the typhoon to the north, Shirley accelerated in a northeasterly direction on the 8th, landing 12 hours later slightly below typhoon force on the coastline of Kyushu. Prior to landfall, the center passed directly over Kusagakishima (elevation 454 feet) which experienced a barometric reading of 982.4 mb (08/0800Z) and sustained 10-minute winds of 70 knots.

The coastal city of Makurazaki, 10 nm south of center crossing, received wind gusts to 90 knots (08/1050Z) from the south-southeast followed by a minimum pressure reading of 985.9 mb (08/1120Z).

Accelerating to forward speeds of 24 kts, Shirley quickly passed Kyushu and Shikoku and transformed into a weak extratropical low over the Kii peninsula on the 9th. Strong gusty winds occurred along the southern coast of Shikoku as Shirley's center passed by late on the 8th. South-southeasterly winds peaking near 42 knots and 70 knots were recorded at Ashizuri and Murotomisaki (station elevation 745 feet) respectively.

Torrential rains brought by Shirley totaled 6.2 inches in 24 hours at Nobeoka on the eastern coast of Kyushu, while Tokushima on the eastern coast of Shikoku reported 7.5 inches (24 hours) during passage. The heavy rains halted the Japanese National Railway services in parts of Kyushu and completely in Shikoku. Power blackouts were also wide spread in Kyushu due to gusty winds downing power lines.

Landslides and flash flooding as a result of the rains were responsible for the flooding of over 30,000 homes, and a casualty toll of 13 dead or missing.

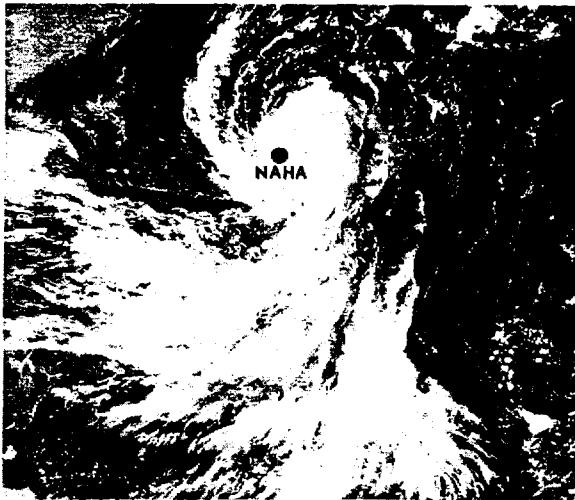
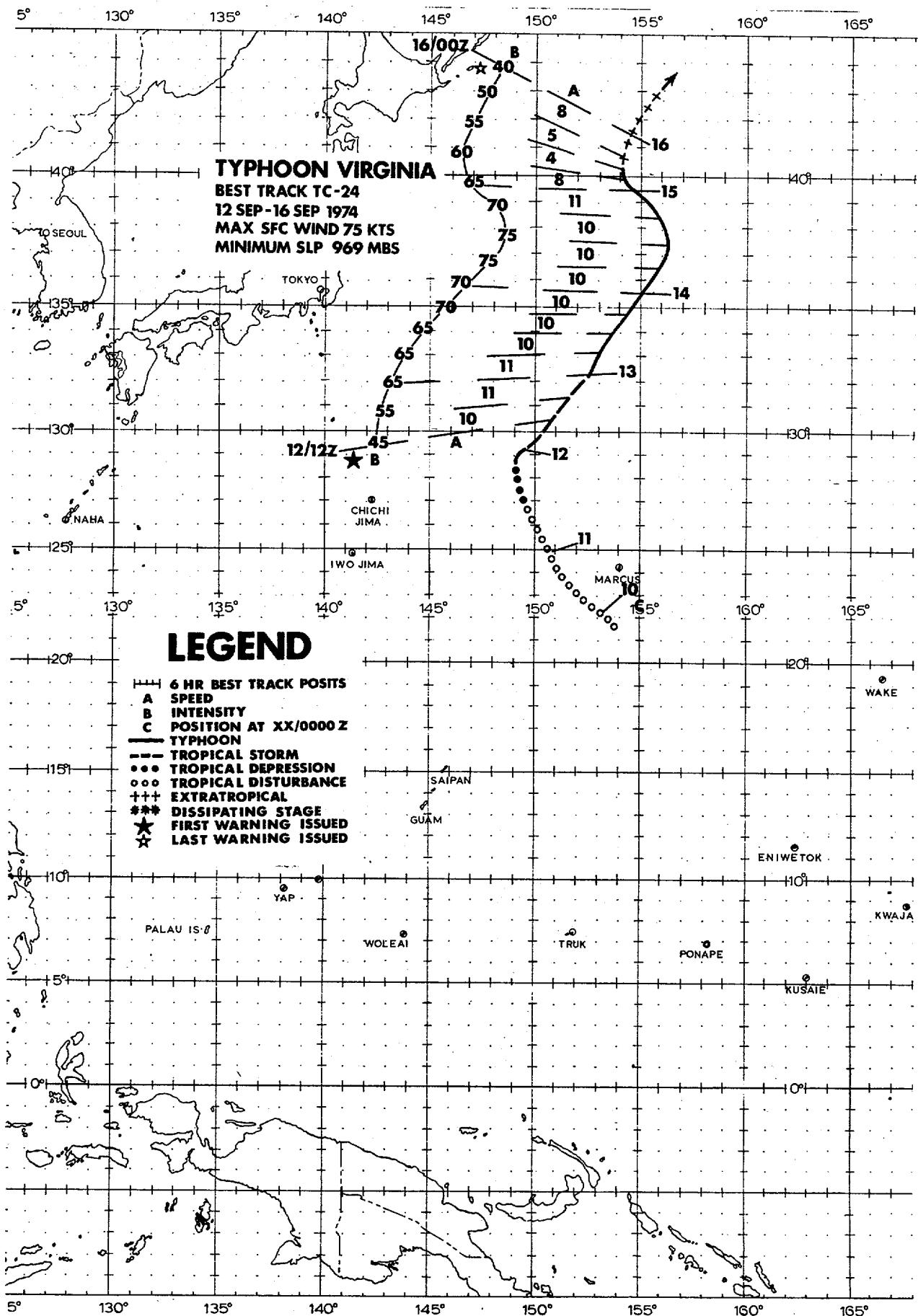


FIGURE 4-15. Shirley reaching typhoon strength 110 nm northeast of Naha, Okinawa, 6 September 1974, 0239Z. (DMSP imagery).



## VIRGINIA

Developing from a disturbance initiated by an upper tropospheric low, Virginia began to display increasing organization in satellite data early on the 11th, 200 nm west of Marcus Island. The circulation advanced northward, shifting to a northeast course and developed tropical storm force winds on the 12th. (Figure 4-16) By the time aircraft reconnaissance was conducted on Virginia late on the 13th, winds had increased to typhoon intensity. Flight level (700 mb) winds of 80 knots were measured in the southern semi-circle on penetration, while a central pressure of 980 mb was recorded within an eye 40 nm in diameter.

Virginia developed winds of typhoon strength at an unusual poleward latitude of 33°N. This was only the 6th tropical cyclone since 1945 to first achieve typhoon intensity north of the 30th parallel.

As a deepening 500 mb-low approached Manchuria from the Lake Baykal area on the 13th, the accompanying downstream ridging caused the westerlies north of Virginia to weaken and retreat poleward. As a result, the typhoon continued to track northeastward in a favorable vertical shear zone to maintain its intensity. Further aircraft reconnaissance of Virginia at 13/0730Z revealed the storm was still tropical in

character at the 37th parallel. The central pressure had dropped to 969 mb in an eye with a 700 mb temperature of 16°C (Figure 4-17). Maximum flight level (700 mb) winds of 90 knots were recorded just outside the eye in the wall cloud region.

By the 14th, a major trough was deepening over Manchuria causing a strong ridge to develop over the Kamchatka peninsula. By mid day, Virginia was blocked by an anomalous high pressure cell to the northeast, resulting in an unusual northwestward movement for a tropical cyclone located at such a northerly latitude (37N). Virginia's tropical lifetime ended shortly thereafter, as satellite data indicated weakening on the 15th and development of extratropical characteristics later in the day 400nm east of Hokkaido.

During the typhoon's northward track, numerous vessels in the shipping lanes were caught in its circulation and reported gale force winds. The strongest winds were experienced by a Netherlands ship (call sign PJSM) (40 knots) on the 13th and the PRESIDENT VAN BUREN (45 knots) on the 14th. The Japanese ship AKAISHI caught near the center on the 15th (0000Z) reported north-easterly winds of 57 knots and a barometer reading of 989.5 mb.



FIGURE 4-16. Tropical Storm Virginia 370 nm northwest of Marcus Island, 11 September 1974, 2243Z. (DMSP expanded imagery)

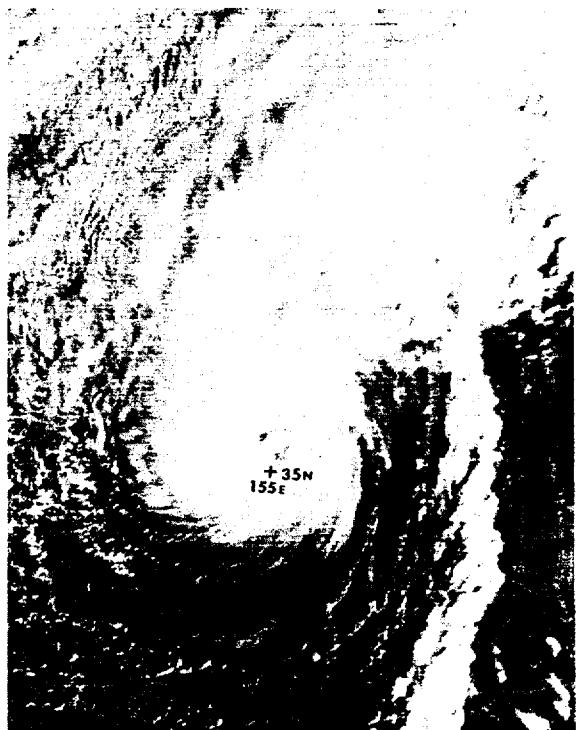
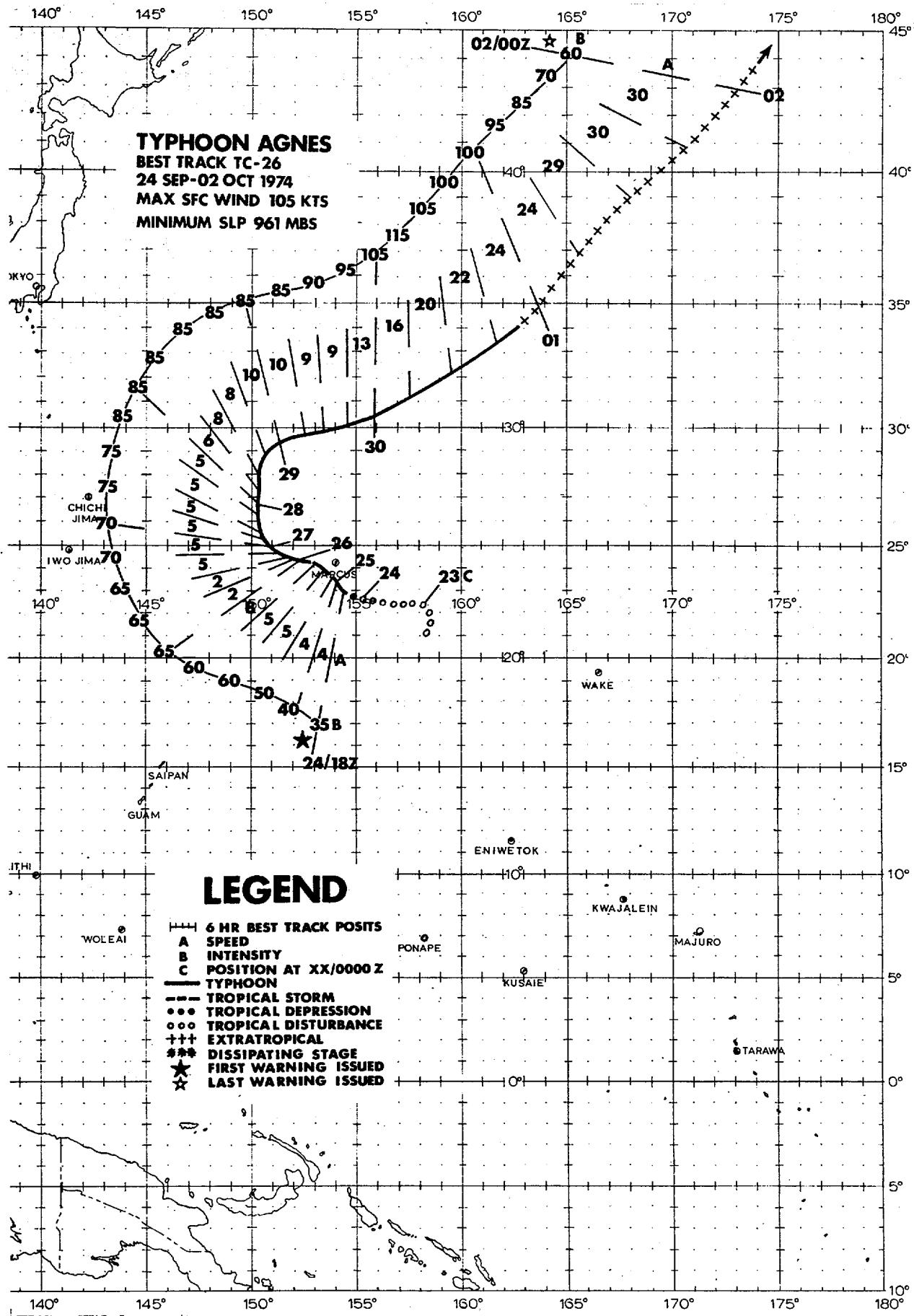


FIGURE 4-17. Typhoon Virginia near peak intensity after crossing the 35th parallel 750 nm east of Tokyo, 13 September 1974, 2207Z. (DMSP expanded imagery)



## AGNES

Evolving from a disturbance initiated by an upper tropospheric low, Agnes developed to depression intensity about 150 nm southeast of Marcus Island on 24 September. Although weak, the flow about the subtropical ridge to the north of the depression kept the tropical cyclone on a slow westerly and later a west-northwest-erly track for the next three days.

Indications from satellite data revealed that the circulation was intensifying rapidly on the 25th. Proof of this development occurred when the center of Agnes passed about 60 nm south of Marcus Island later that day. The Japanese meteorological station on the island experienced strong easterly gusts to 81 knots (25/1140Z) following a minimum barometer reading of 998.7 mb (25/0600Z) (Figure 4-18). Aircraft reconnaissance of Agnes the next day (26/1450Z) confirmed that the storm had gained typhoon force. Flight level (700 mb) winds of 70 knots and a central pressure of 984 mb were reported.

As a cell in the subtropical ridge west of Agnes weakened significantly on the 27th, the typhoon began to abruptly track northward. With upper level westerlies strengthening east of Japan, Agnes shifted to an east-northeast track 36 hours thereafter, and accelerated in forward speed early on the 29th (Figure 4-19).

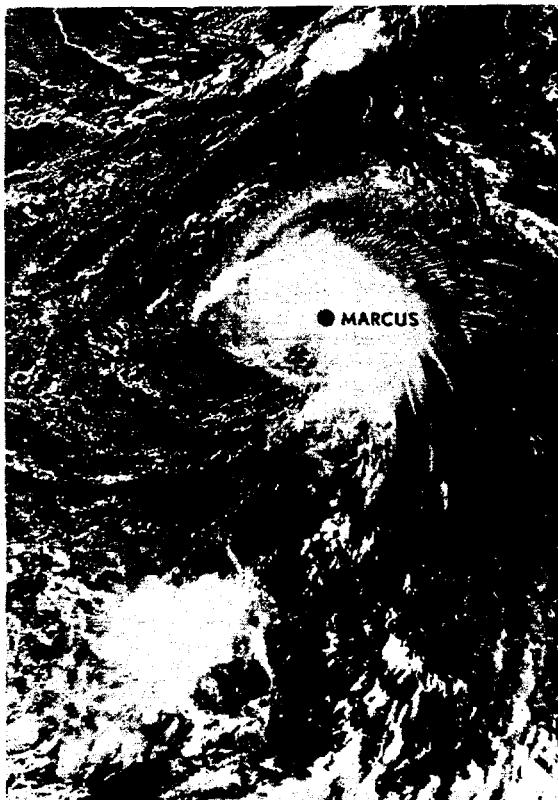


FIGURE 4-18. Agnes reaching typhoon strength 100 nm west of Marcus Island, 25 September 1974, 2151Z. (DMSP imagery)

Like typhoon Virginia, Agnes continued to deepen after recurvature. Reconnaissance aircraft observed the lowest central pressure of the typhoon's life (981 mb) on the 30th (0303Z). In addition, flight level (700 mb) winds of 135 knots were observed 40 nm from the center during exit from the eye. Forward speed of Agnes at this time had increased to 15 knots.

Over the Kuril Islands, a 500 mb low was tracking eastward accompanied by a deep trough. The amplification of strong southwesterly flow ahead of the trough caused Agnes to turn on a northeast course and accelerate to 30 knots by 1 October. Satellite data indicated Agnes acquired extratropical characteristics after crossing 35°N; however, the circulation remained intense as evidenced by aircraft flight level (700 mb) winds of 110 knots (01/0415Z). The strong extratropical low of Agnes continued to race poleward thereafter, finally merging with the advancing 500-mb low 300 nm south of Attu in the Aleutian chain on the 3rd.

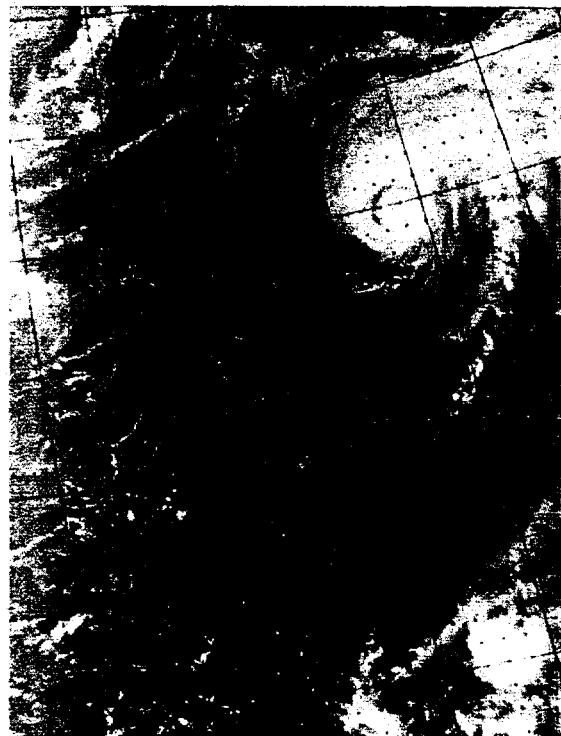
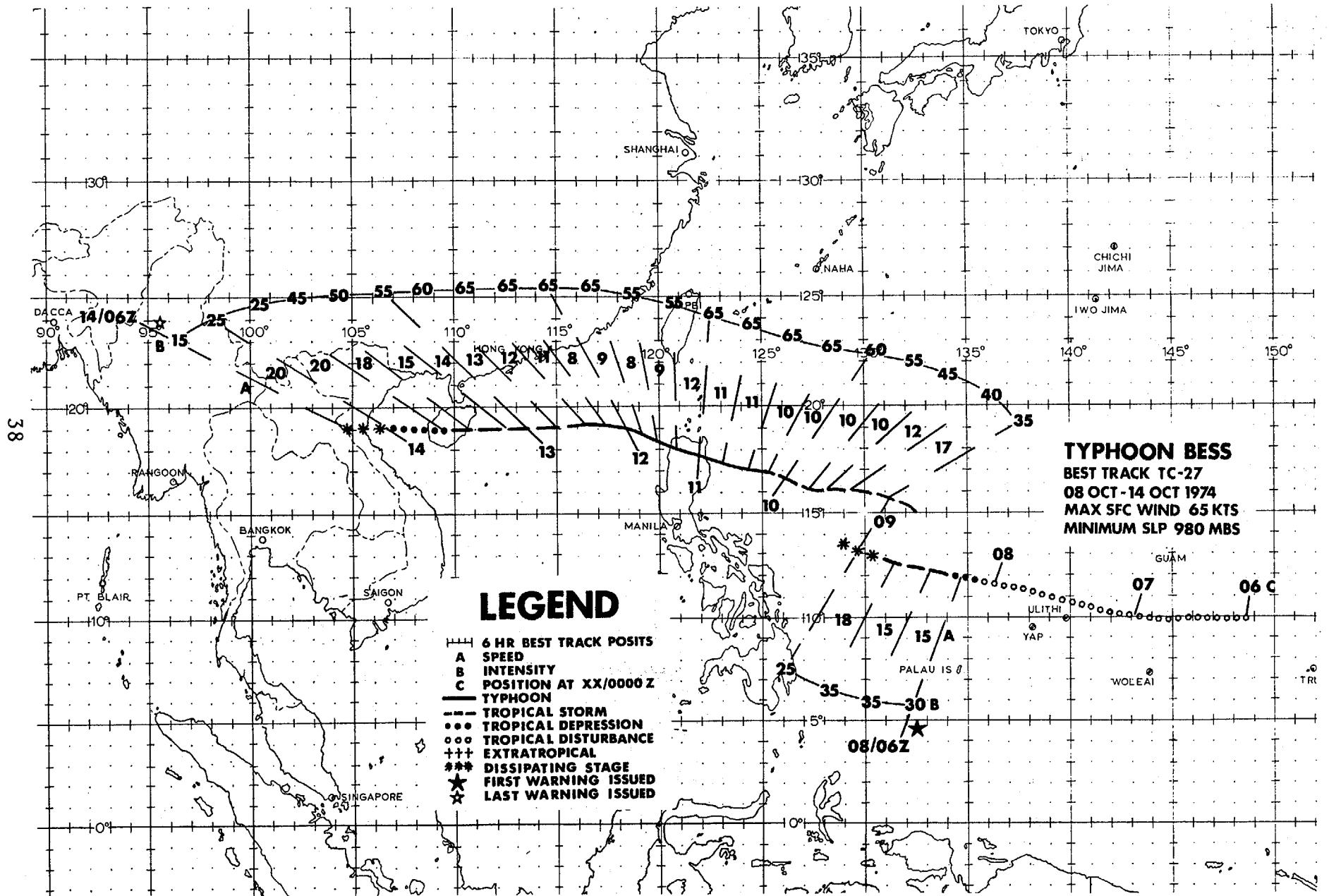


FIGURE 4-19. Moonlight visual of Typhoon Agnes after shift to an easterly track. Lights of Tokyo 750 nm to the northwest and other cities in Japan are visible in left-hand portion of data, 29 September 1974, 2119Z. (DMSP imagery)



The circulation that eventually developed into Typhoon Bess was first noted on synoptic charts south of Guam on 7 October (0000Z). The circulation was accompanied by broad monsoonal flow, and, by the 9th, evidence from satellite data and aircraft reconnaissance indicated two centers had developed (Figure 4-20). The northern system dominated, while the center that had initially been tracked for several days dissipated. Due to a strong subtropical ridge, movement of the entire circulation complex up to this time had been rapid, with a forward speed of 18 knots. Due to a deepening trough in the westerlies over the East China Sea, the pressures north of the storm weakened, and Bess slowed to almost half its original speed.

Winds in the cyclone reached typhoon intensity early on the 10th as it approached northern Luzon. Approximately 24 hrs later, coastal crossing occurred about 50 nm south of Escarpada Point. Inland, Tuguegarao City reported a pressure of 976.9 mb (the minimum reported during the storm's lifetime) while Bess's center passed 30 nm north of the station. Relatively unaffected by a short journey over the mountainous island, Bess emerged into the South China Sea as a minimal typhoon.

Bess's circulation brought high winds affecting much of Luzon and the straits. Inland, Baguio weather station (elevation 4860 feet) experienced wind gusts to 80 knots while Appari on the northern coast recorded a gust to 96 knots. In the Luzon straits several ships reported strong winds as the typhoon's center passed to the south on the 11th. The Indian ship BAILADIA and a German vessel (call sign DEBC) experienced north-easterly winds of 50 knots and 57 knots respectively. Considerable rainfall with 24 hour totals of 5 to 6 inches occurred over much of northern Luzon, with a 24 hour ex-

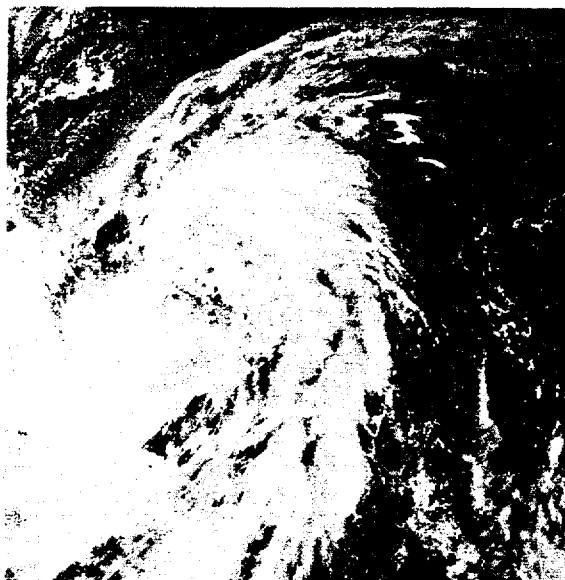


FIGURE 4-20. Tropical Storm Bess exhibiting a broad circulation center 500 nm east of Luzon Island, 9 October 1974, 0235Z.

treme of 30.8 inches measured at Baguio during passage. Landslides and flash flooding accounted for casualties of 26 killed and 3 missing. Total damage including public and private property, agricultural crops (rice), and livestock were estimated near \$9.2 million.

Once in the South China Sea, Bess turned westward in response to a massive high pressure area dominating central and South China. The combination of the typhoon's envelope of low pressure and this high pressure area generated a strong northeast flow over the waters south of the China coast. Pratas Island, 110 nm to the northwest of the typhoon's center, reported sustained (10 minute) winds of 50 knots on the 12th while the British ship MARCO POLO estimated winds of 45 knots 220 nm northwest of the center (Figure 4-21). As Bess tracked south of Hong Kong late on the 12th, peak gusts of 58 knots and 49 knots were observed at Wagland Island and the Royal Observatory respectively.

As the modifying northeast monsoon flow entered the typhoon's circulation, the central pressure began to fill and winds associated with Bess dropped to tropical storm strength on 13th. Bess increased in forward speed crossing Hainan Island late in the day and weakened to depression intensity. Emerging into the Gulf of Tonkin, the circulation continued to weaken, eventually dissipating on the North Vietnam coast early on the 14th.

In addition to the damage wrought on the Philippines, Bess claimed a U. S. Air Force reconnaissance aircraft in the South China Sea south of Hong Kong on the 12th. Last contact with the mission occurred while the aircraft was collecting peripheral data in the typhoon's northern semicircle. Nothing was ever heard again of the plane or its crew of six.

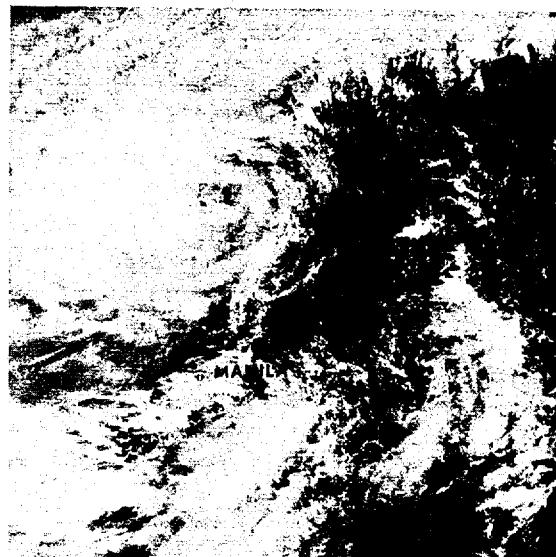
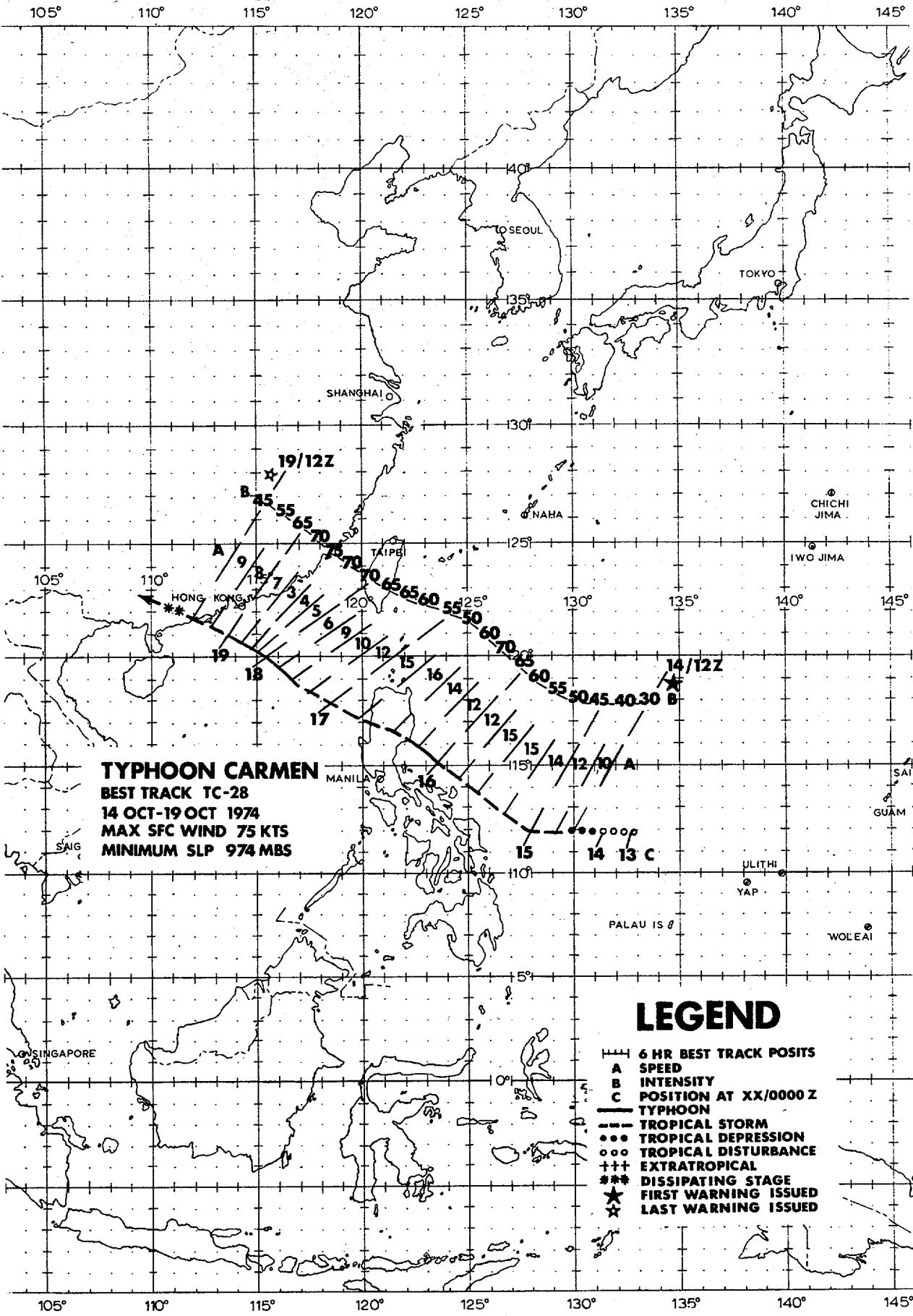


FIGURE 4-21. Bess of minimal typhoon strength in the South China Sea 290 nm southeast of Hong Kong, 12 October 1974, 0312Z. [DMSP imagery]



CARMEN

As Bess passed south of Hong Kong, the monsoon trough in the Philippine Sea produced another circulation west of Yap. This system moved westward displaying increasing organization on satellite data. Reports received from the Liberian ship ASIAN MORALITY (west wind 45 knots, pressure 998.5 mb) passing close to the center on 15 October (0000Z) confirmed that Carmen had reached tropical storm strength 180 nm east of Samar Island.

Intensifying further, Carmen turned on a northwest course and headed for northern Luzon. Some 12 hours prior to arrival on the Luzon coast near Casiguran, aircraft reconnaissance reported a central pressure of 974 mb (lowest during the lifetime of storm) and winds of minimal typhoon force (Figure 4-22).

Casiguran reported gusts to 59 knots and a minimum pressure of 981.2 mb as the center passed just north of the station. Maximum 24 hour rainfall recorded as the storm cut across Luzon was at Baguio (8.98 inches). Casualties in the wake of Carmen amounted to 13 dead, and damage losses were estimated near \$11.6 million.

Elsewhere, eastern Taiwan suffered crop damage near \$1.4 million due to the heavy rains associated with typhoons Bess and Carmen. Newspaper reports indicated 11 persons killed on Taiwan.

As Carmen entered the South China Sea, weakening pressures over east central China influenced the typhoon to slow in forward speed. On the 18th, satellite intensity estimates indicated Carmen probably reached a peak strength of 75 knots about 120 nm south of Hong Kong as the storm edged slowly northwestward.

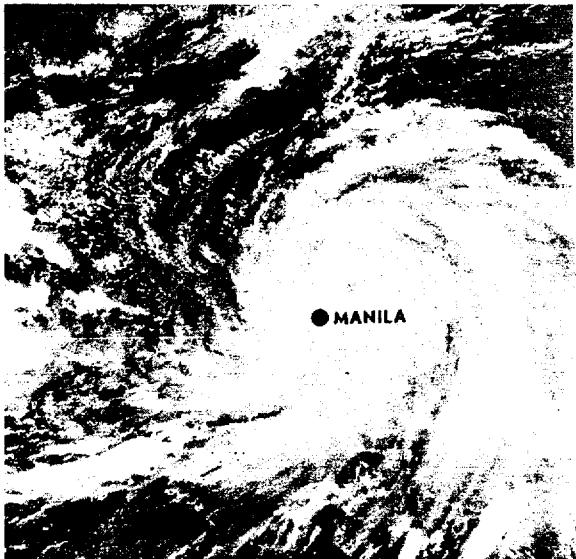


FIGURE 4-22. Typhoon Carmen a few hours prior to landfall on Luzon near Casiguran, 16 October 1974, 0348Z. [DMSP imagery]

During the 18th, several ships caught in Carmen's circulation reported strong winds. An unidentified vessel experienced northerly winds of 45 knots 150 nm northwest of the typhoon's center, while the Norwegian ship JARAMA reported easterly winds of 50 knots 130 nm to the northeast (both reports 18/0000Z). Later the U. S. ship RAPHAEL SEMMES passing south of the center reported 60 knot winds at 18/1200Z and 19/0000Z.

Following passage of an upper level trough over the Yellow Sea on the 18th, a high pressure ridge began to penetrate into South China, causing a northeasterly flow of modified air from the land mass into the typhoon's circulation. Within 24 hours, Carmen's central pressure began to fall rapidly, and winds dropped to tropical storm force. Turning on a more westerly course, Carmen weakened to depression strength and later dissipated east of the Luichow peninsula early on the 20th.

The center of Carmen approached within 70 nm of Hong Kong on the 19th producing considerable rainfall and gale force winds in the Colony. Peak gusts of 70 knots were observed both at Waglan Island and the Royal Observatory. Maximum rainfall during the 3 day period (18-20 October) totaled 18.1 inches (Figure 4-23). Carmen brought much needed rain to the Colony which was suffering from a drought; however, heavy downpours flooded many low-lying areas and caused landslides and road collapses. Newspaper reports indicated extensive crop damage due to flooding caused by the rains. Two lighters went aground and four other vessels broke away from their moorings. One fatality was attributed to Carmen in the Colony.

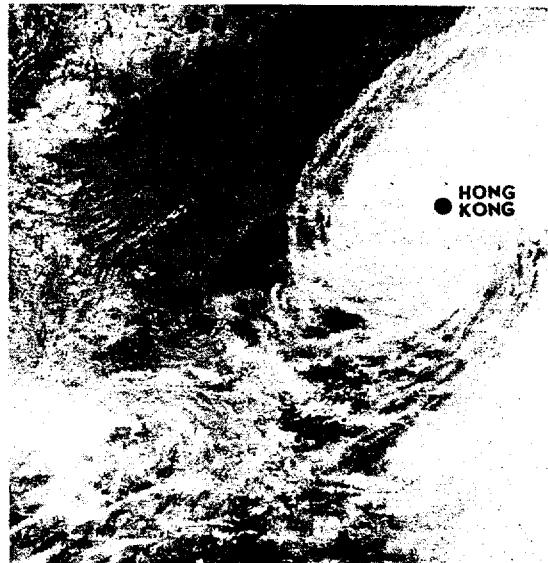
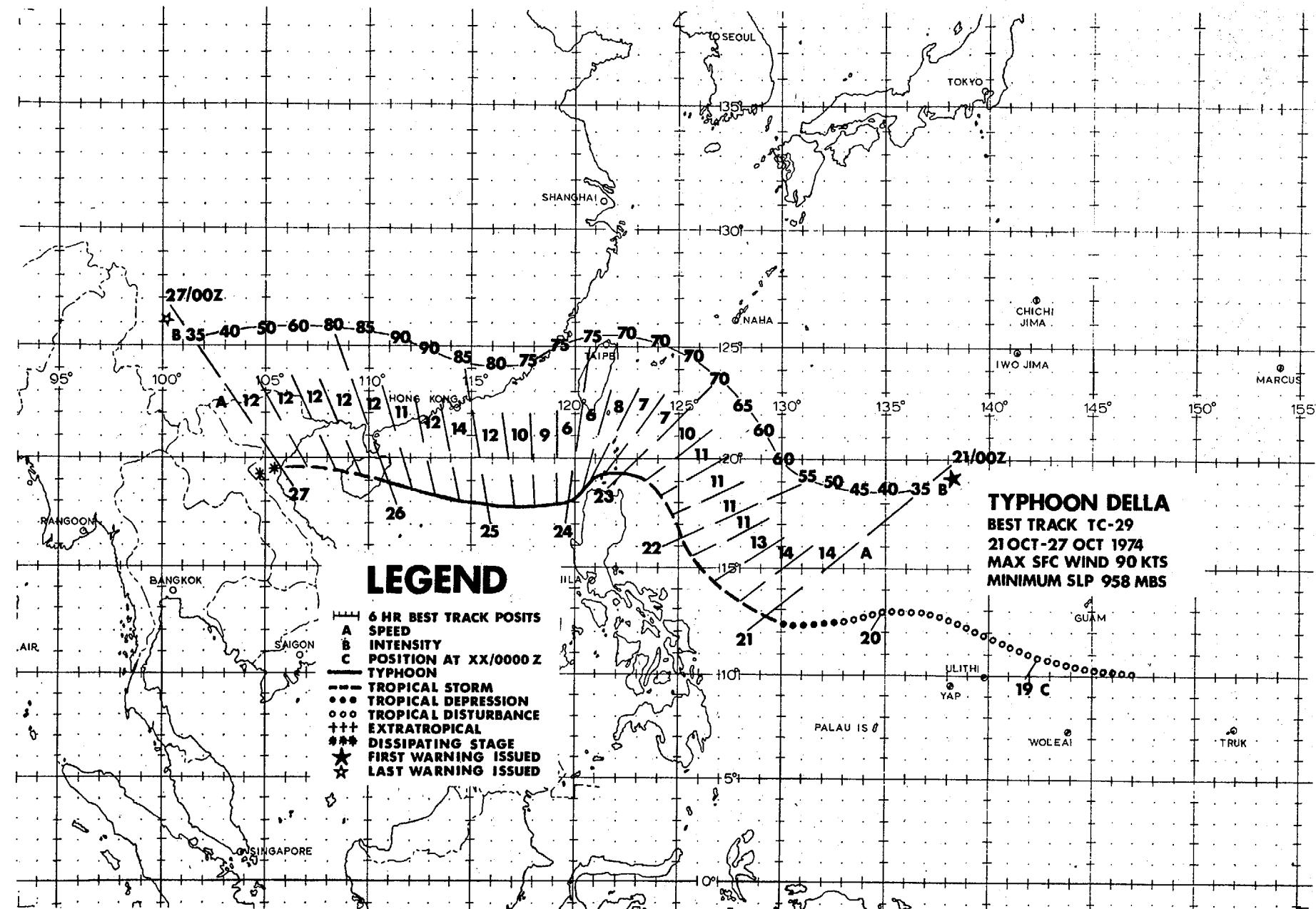


FIGURE 4-23. Tropical Storm Carmen approaching the South China coast 90 nm southwest of Hong Kong, 19 October 1974, 0434Z. [DMSP imagery]

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## DELLA

The third in a succession of tropical cyclones developing during October, Della formed in the monsoon trough south of Guam while Carmen weakened in the South China Sea on the 19th. Two days later, the circulation intensified to tropical storm strength approximately 250 nm east of Samar Island (Figure 4-24).

The subtropical ridge north of Della eroded quickly on the 21st as a major short wave in the westerlies approached from China. Della was drawn up into the weakness as the storm shifted to a northwest and later a north-northwest track. While winds about the center reached typhoon force, the short wave trough bypassed the meridian of Della late on the 22nd. With passage of the trough, a strong mass of high pressure advanced into southeast China and blocked further poleward movement of Della. The typhoon responded by turning sharply westward.

Navigating the Luzon straits during the 23rd, Della's center shifted southwestward and skirted the Luzon coast near Cape Bojeador. During this period, strong gusty winds swept the northern Luzon coastline. Aparri measured a gust to 85 knots from the

south after center passage, while Laoag reported southwesterly winds gusting to 56 knots. Vigan, on the west coast, received the heaviest 24-hour rainfall (3.1 inches). Only slight damage occurred in the Philippines due to the center avoiding landfall.

Charting a westward course across the South China Sea as a relatively small typhoon, Della intensified steadily. A Japanese ship the YAMAMIZU MARU encountered winds of 60 knots southeast of the center on the 24th (0600Z) while the Israeli ship NURITH reported 60 knot winds as it crossed west of Della's eye 12 hours later (24/1800Z). Aircraft reconnaissance of Della on the 25th (0456Z) measured a central pressure of 958 mb (lowest recorded during the storm's life) within a tight eye 15 nm in diameter (Figure 4-25).

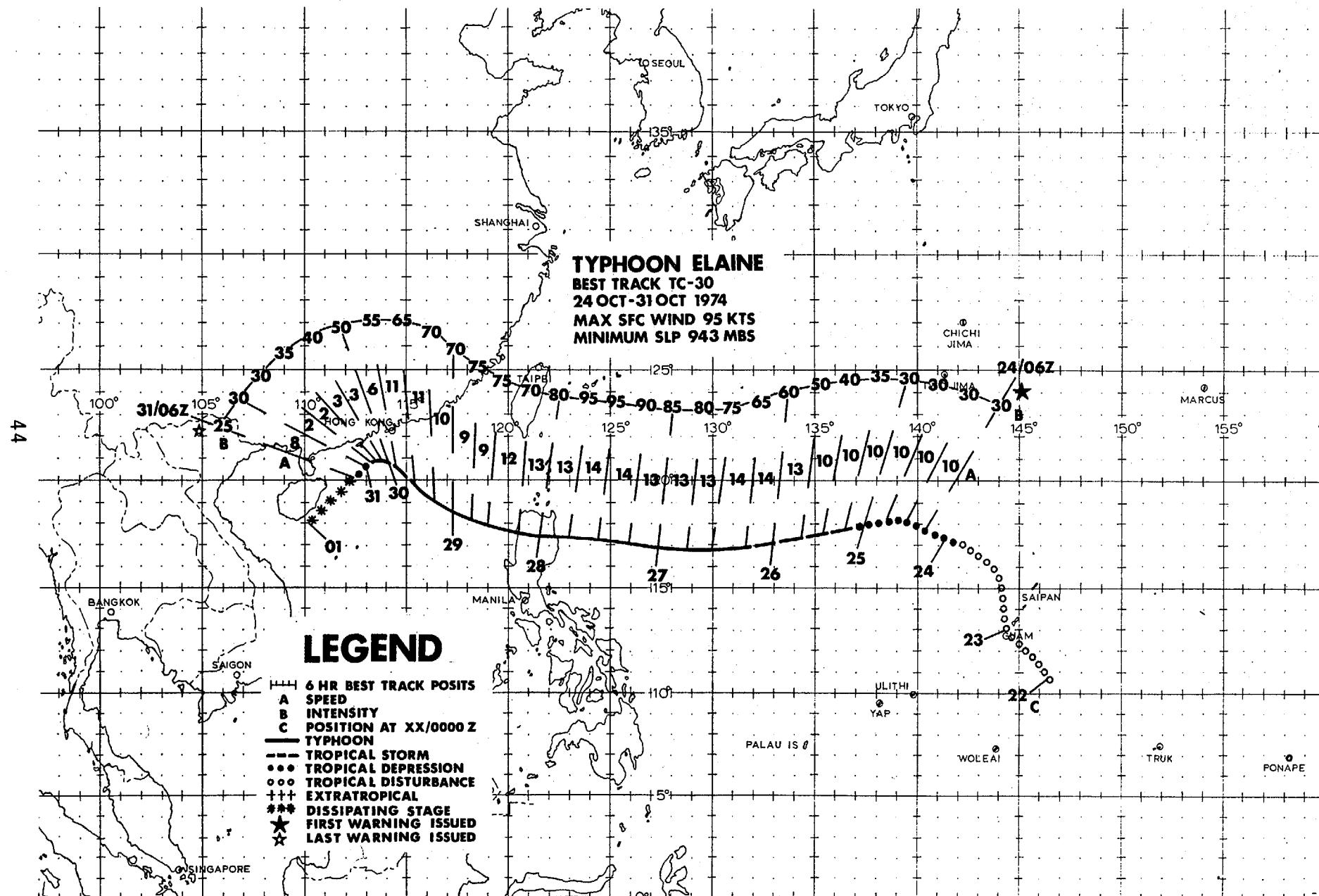
Intensity estimates from satellite data suggested that Della weakened slightly before landfall on Hainan Island on the 26th. Emerging into and crossing the Gulf of Tonkin, the storm never regained its former intensity. Following coastal crossing of North Vietnam early on the 27th, the circulation weakened and subsequently disappeared from synoptic analyses.



FIGURE 4-24. Della achieving tropical storm strength in the Philippine Sea 210 nm east of Samar Island, 21 October 1974, 0023Z. (DMSP imagery)



FIGURE 4-25. Typhoon Della near peak intensity in the South China Sea 280 nm south of Hong Kong, 25 October 1974, 0052Z. (DMSP imagery)



Elaine, the largest of the typhoons to traverse the Philippine Sea during October, was upgraded from tropical depression status early on 25 October about 550 nm northwest of Guam. Developing from a circulation in the monsoon trough near Guam (the fourth to form in the trough during October), the envelope of Elaine's 1000 mb isobar eventually grew to 500 nm in diameter prior to striking Luzon a week after initial detection (Figure 4-26). During this period, Elaine intensified markedly as aircraft reconnaissance of the typhoon, 12 hours prior to striking Luzon, observed a central pressure of 943 mb and 700 mb flight level winds of 110 knots.

The same high pressure regime that forced Della on a westerly track through the Luzon straits on the 23rd extended eastward, and, late on the 24th, blocked Elaine (as a depression) from any further poleward movement. For a period of three days, Elaine was influenced by this ridge of high pressure to the north, forcing the typhoon on an atypical westerly heading across the Philippine Sea - an anomalous track for October tropical cyclones developing near the Marianas which normally follow a northward recurring course.

Elaine, the most severe typhoon to strike Luzon in the month, brought strong winds over a large expanse of the northern Philippines. Inland, Tuguegarao City observed a minimum pressure of 958.7 mb (27/2300Z) and peak gusts to 96 knots as the center passed south of the station. The west coast station of Vigan recorded a minimum pressure of 972.0 mb with an extreme gust of 100 knots (28/1100Z) as the center emerged into the South China Sea. Newspaper reports indicated the winds were strong enough to lift a new galvanized iron roof off a centuries old cathedral in Vigan. Manila (180 nm to the south) received gusts to 43 knots. Baguio (elevation 4860 feet) experienced extreme winds of 76 knots when the center passed 70 nm to the north.

Elaine brought 24-hour rainfall totals of 3 to 4 inches to northern Luzon while Manila reported 10.5 inches. An extreme 24-hour amount of 32.2 inches was reported at Baguio. The heavy rains combined with those brought by Della several days earlier left most farmlands under water.

Damage was extensive in Luzon with estimates of losses to crops, private and public properties amounting to \$21 million. Thousands of homes were destroyed or damaged with some 300,000 persons left homeless. A total of 23 persons were listed as killed, 14 of whom were lost when swept off a ferry-boat in the Sibuyan Sea.

Maritime casualties were high as 20 Philippine fishermen were counted missing in coastal waters. At sea, the 39-ton Japanese vessel KOSHU MARU sank east of Luzon with its crew of 11 presumed lost. The 3800 ton Korean ship MOKPO reported flooding and serious damage near the Luzon straits.

Elaine turned westward then west-northwestward while moving across the South China Sea as the region of high pressure dominating China weakened. During the 28th and 29th, the typhoon's circulation brought strong winds to several merchant vessels. The highest values reported were from the Japanese vessel OYLMPLUS MARU experiencing 50 knots west of the center on 28/1200Z as Elaine was emerging from the Luzon coast, and later from the Russian ship ALEXANDER IVANOV on the 29th (1200Z) 120 nm north of the center who reported winds of 50 knots. Pratas Island observed sustained (10-minute) winds of 45 knots as Elaine's center passed 120 nm to the south on the 29th.

As the typhoon advanced northwestward, pressure over South China continued to fall causing Elaine to slow to almost a stall 90 nm south of Hong Kong late on the 29th. At this time, an onset of northeast monsoon flow influenced Elaine's circulation with subsequent filling and rapid weakening of winds about the center to storm strength. By the 31st, Elaine was reduced to a tropical depression and forced southwestward by an advancing high pressure ridge over South China. One day later the circulation dissipated southeast of Hainan Island.

During the cyclone's close proximity to Hong Kong, Elaine brought gale force winds to the Colony. The Royal Observatory registered a gust of 52 knots, while winds peaked to 55 knots on Wagalan Island. A two-day (30th & 31st) rainfall amount of 8.6 inches was measured at the Royal Observatory while Elaine stalled offshore.

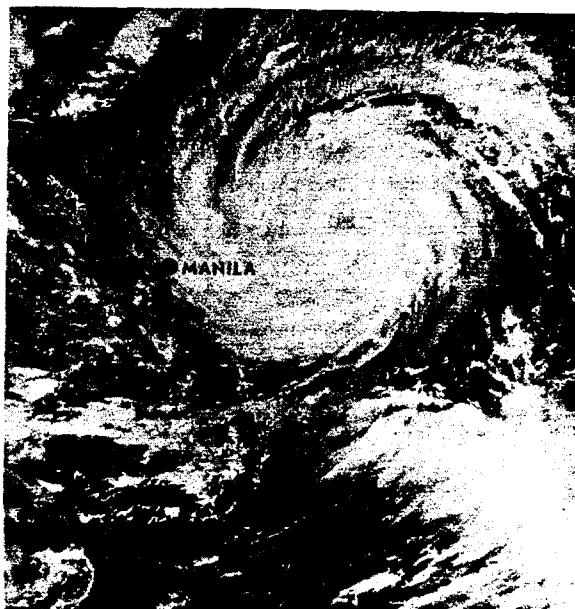
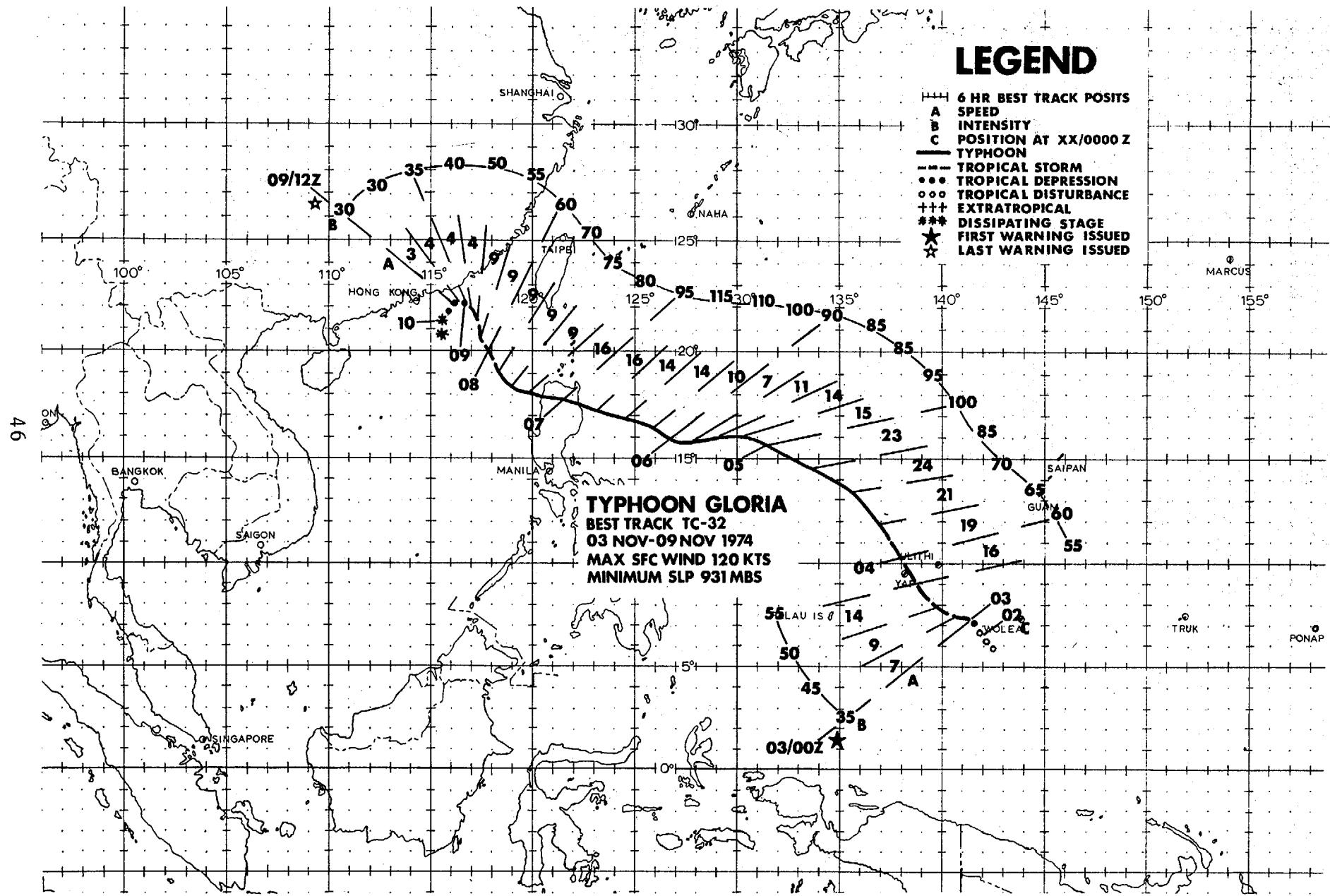


FIGURE 4-26. Massive Typhoon Elaine 300 nm east of Luzon, one day prior to the center striking the island, 27 October 1974, 0015Z. (DMSP imagery)



## GLORIA

Gloria, like Elaine, developed a large circulation with the cyclone's 1000 mb isobar reaching 400 nm in diameter while traversing the Philippine Sea. Gloria, however, developed to these dimensions early in its life as the storm reached typhoon force 50 nm north of Yap Island on 4 November (Figure 4-27). Earlier Gloria, developing from a depression in the active monsoon trough, had passed about 10 nm northeast of Yap Island. The island's weather station registered a minimum pressure of 985.7 mb at 03/2020Z and later a peak gust of 46 knots as winds shifted to the west.

The building of a strong surface ridge southwest from Marcus Island subjected Gloria to a tightening gradient and strengthening flow in the right semicircle. Strong winds were observed at a considerable distance to the northeast with Andersen AFB Guam, 350 nm from the center, observing gusts to 46 knots midday on the 3rd.

Gloria commenced an unusual acceleration in forward speed up to 24 knots during the 4th - twice the normal for the area. Moving some 500 nm in 24 hours, Gloria occupied the central Philippine Sea early on the 5th. The FREDRICK LYKES caught west of the center at 05/0000Z reported northwest winds of 60 knots, while the barometer dipped to 983.4 mb.

Rapid deepening occurred once typhoon force was attained early on the 4th as Gloria's central pressure fell at a rate of 2.3 mb/hr during the rest of the day culminating in a minimum of 937 mb at 05/0400Z. Aircraft reconnaissance of the central core region early on the 5th proved extremely difficult as the eye diameter was only 4 nm. Subsequently, the typhoon's central pressure rose to 955 mb during the next 12 hours as Gloria's forward motion slowed temporarily to 10 knots. Following the rapid filling process, the typhoon's central pressure began an unusual second deepening as Gloria once again increased in forward speed (15 knots) targeting in on northern Luzon. The last aircraft reconnaissance of the typhoon in the Philippine Sea (10 hours before landfall) revealed Gloria had strengthened markedly--700 mb flight level winds of 120 knots during penetration and a minimum pressure of 931 mb at 06/0916Z (lowest pressure recorded during the year).

Following landfall, Gloria cut across Luzon in 6 hours. Maximum winds recorded during the cyclone's passage occurred at the northern coastal station of Aparri which reported gusts to 96 knots from the northeast and Vigan on the west coast registering south-southwest winds peaking at 94 knots. Laoag received winds gusting to 81 knots prior to Gloria's emergence in the South China Sea. The island town of Tugubgarao, 20 nm south of the center's path, observed the lowest pressure--972.9 mb. Rainfall amounts for a 24-hour period ranged from 3.8 inches at Aparri to 7.8 inches at Tugubgarao while Baguio reported an extreme of 18.9 inches.

Gloria climaxed a series of five typhoons which affected Luzon in less than a month--a record frequency dating back to 1945. Newspaper reports indicated \$3.2 million in damage to crops and public and private property as a result of Gloria. Over 700 homes were destroyed by wind or inundated by floodwaters leaving close to a 1000 persons homeless. A casualty toll of 10 persons was reported in the typhoon's wake mostly due to drownings.

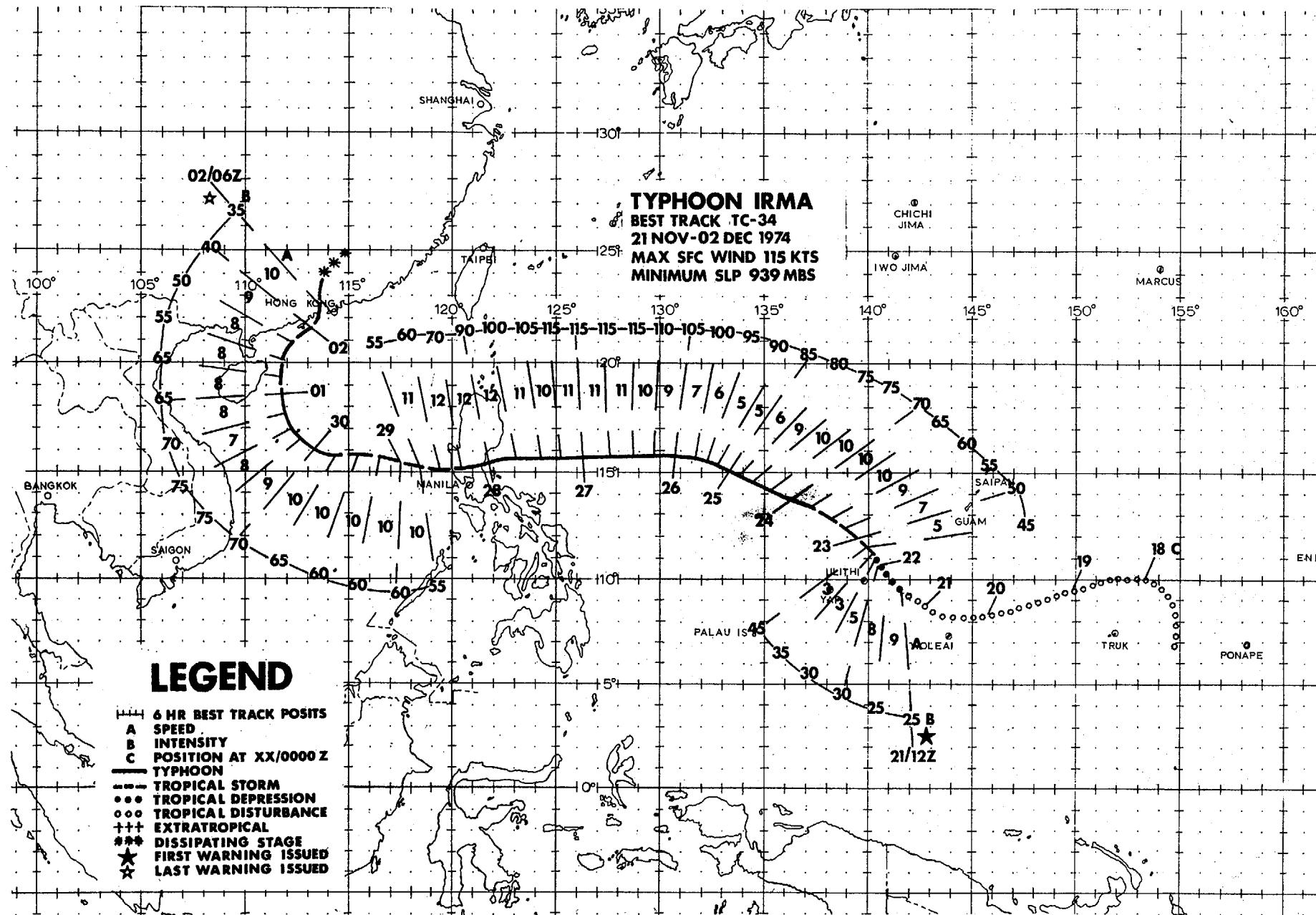
As Gloria exited Luzon into the South China Sea on the 7th, its forward motion slowed and a gradual northward track commenced as surface pressures were anomalously low over South China. However, like Elaine, Gloria failed to reach the China coast. A massive high pressure area from Manchuria began to penetrate into central China on the 9th blocking further northward progress. The influx of modified air off the mainland due to the onset of a northeast monsoon began to affect Gloria by midday of the 8th as the circulation dropped in intensity to storm force. Reduced to a tropical depression by the 9th, Gloria began to drift southward and dissipated on the 10th as pressures continued to build over South China.

During the storm's transit of the waters west of Luzon during the 7th and 8th some of the highest winds reported by merchant vessels during the year occurred. Winds of 65 knots were reported from a British vessel (call sign MYCE) (07/1200Z) and a Kuwait ship (call sign 9KSD) (08/0000Z) as both vessels passed within 60 nm of the eye.



FIGURE 4-27. Gloria achieving typhoon strength 100 nm north of Yap Island in the Philippine Sea, 4 November 1974, 0300Z. (DMSP imagery)

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The year's last typhoon, Irma terminated the barrage of late season typhoons to strike Luzon Island of the Philippine archipelago during October and November.

Initial development of Irma took place south of Guam as a depression in the monsoon trough. Passing north of Ulithi atoll on 22 November (Figure 4-28), Irma's circulation intensified rapidly producing typhoon force winds late on the 23rd. Like Elaine and Gloria, Irma's circulation dominated the Philippine Sea with the diameter of the 1000 mb isobar extending about 450 nm by the 23rd. The central pressure of the typhoon plummeted after passage of Ulithi until a minimum of 939 mb was recorded by aircraft reconnaissance 3 1/2 days later at 26/0635Z. Sustained surface winds generated around Irma's eye were estimated to be 115 kts during the 26th as the typhoon reached its peak intensity 400 nm east of Luzon.

Late on the 25th a massive high pressure ridge extending eastward from China to the Ryukyu chain prevented further poleward movement by Typhoon Irma near 16°N (Figure 4-29). This ridge dominated the region north of the typhoon through the 27th forcing Irma on an almost straight westerly track until it crossed the coast of Luzon. The turn of Irma to the west was very unusual. After reaching such a poleward latitude in the Philippine Sea few November typhoons fail to recurve.

Of the ships caught in the typhoon's gale force wind area in the Philippine Sea, the vessels MIKUNISAN MARU (200 nm west of the center at 25/1200Z), and a British ship (call sign GPIP) 200 nm northeast of the center at 26/0000Z) both reported 45 knot winds.

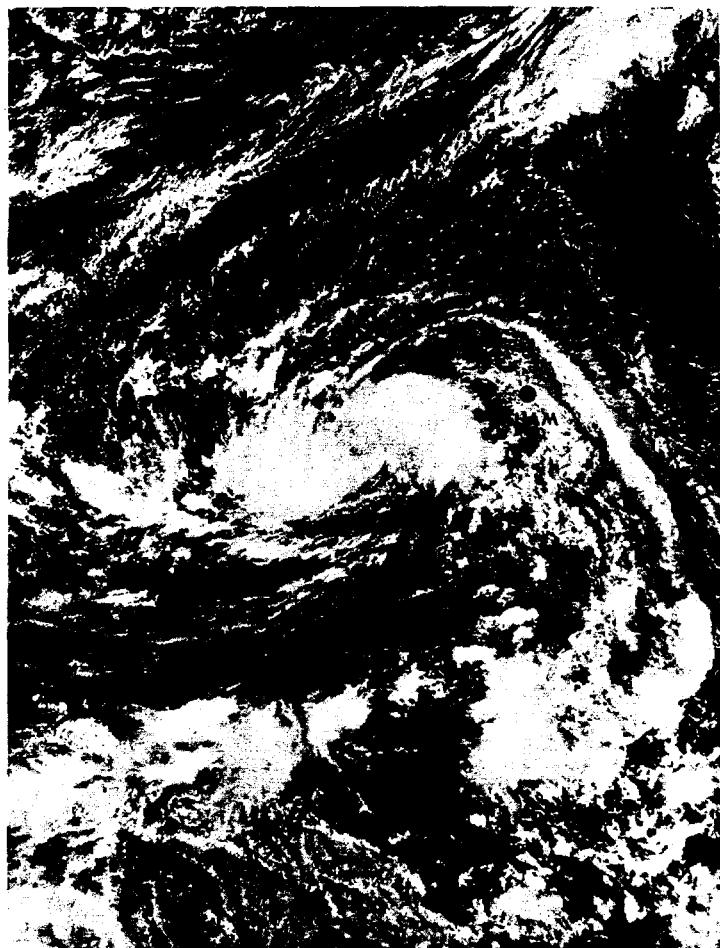


FIGURE 4-28. Irma strengthening to tropical storm intensity 300 nm southwest of Guam, 22 November 1974, 0229Z.  
(DMSP imagery)

Maritime casualties included several ships caught in heavy seas produced by Irma's peripheral winds. The 5 ton Liberian ship PACIFICOEVERTT ran aground near Siarago Island in the southern portion of the Philippine archipelago, while the 4 1/2 ton Singapore ship FWSAN met the same fate at Nazasa Bay on Subic Bay. Reports from Cataabato, Mindanao indicated the 2 ton Philippine vessel ZAMBOANGA CITY capsized and sunk offshore but all the crew survived. Not so fortunate was the 3 ton Panamanian ship GREEN HILL which sank after the cargo shifted 60 nm north of Miyako Jima in the Ryukyu chain. Of a crew of 20, four were lost.

Striking Luzon early on the 28th, the eye of Irma crossed the coastline 30 nm south of Baler, passing directly over Clark Air Base, later exiting Luzon near Iba on the west coast. Peak gusts of 74 knots and a minimum pressure of 983.9 mb were experienced at Baler. Later Clark AB recorded a barometric reading of 979.0 mb in the eye at 28/0700Z while registering a peak gust of 83 knots from the northwest at 28/0500Z. This was the highest recorded gust at Clark AB since before World War II. As Irma's eye emerged on the west coast, east-southeast-

erly winds peaking at 58 knots occurred at Iba as the pressure dropped to 983.5 mb.

Twenty-four hour rainfall totals from Irma generally varied from 2 to 5 inches over Luzon with an extreme of 6.7 inches recorded at Cubi Point Naval Air Station. This amount broke previous station records for the month of November (previous 24-hour maximum was 5.3 inches).

Irma brought strong gale force winds to the metropolitan area of Manila. A gust to 51 knots from the southwest was reported at the international airport while the port area experienced westerly winds gusting to 60 knots. Several ships in Manila Bay were reported blown almost to the Roxas Boulevard seawall during the seige.

Damage to public and private buildings, public works, crops, and livestock was estimated at \$7.3 million. Over 1000 homes were reported destroyed or partially damaged by the winds. Newspaper reports indicated Irma claimed 11 lives in addition to sinking several small vessels and fishing boats.

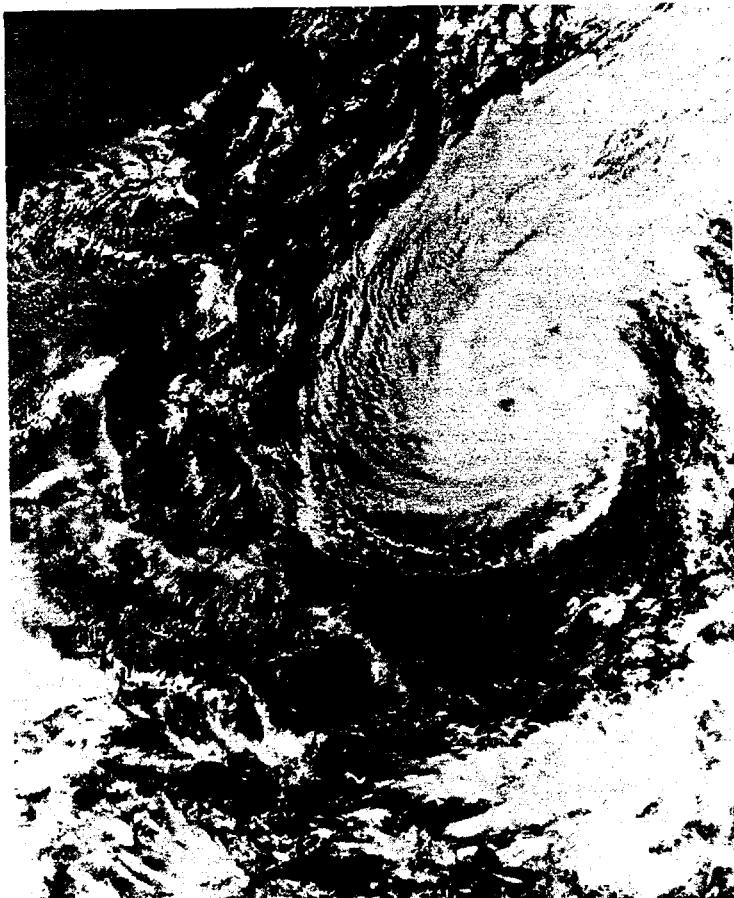


FIGURE 4-29. Massive Typhoon Irma in the central Philippine Sea 500 nm east of Cantanduanes Island, 25 November 1974, 0315Z. (DMSP imagery)

As Irma departed Luzon, the ridge of high pressure over South China weakened, allowing the cyclone, then of tropical storm strength, to take a slight poleward motion during its track across the South China Sea. Late on the 29th, pressure began to fall over southwestern China as remains of a tropical depression (formerly T.C. 30/74) moved into the area from Burma. Irma briefly regained typhoon strength during this period, and abruptly turned to the north on the 30th passing over the Paracel Islands. A meteorological station in the islands observed a pressure minimum of 970.5 mb (30/1200Z) and sustained (10 minute) wind of 60 knots as winds shifted from the west at 20/1500Z. Based on available records since 1945, no tropical cyclone has been as intense as Irma so late in the season in the northern South China Sea.

Passing abeam of Hainan Island on 1 December, Irma dropped below typhoon strength and rapidly filled while approaching the South China coast. Tracking 30 nm west of Hong Kong the circulation dissipated inland one day later. Maximum rainfall brought to Hong Kong by the weakening storm was 7.0 inches recorded at the Royal Observatory during the 2nd, while southerly winds gusting to 34 knots were observed at Cheung Chau. It is noteworthy to mention that Irma was the latest tropical storm on record to affect the South China coast.

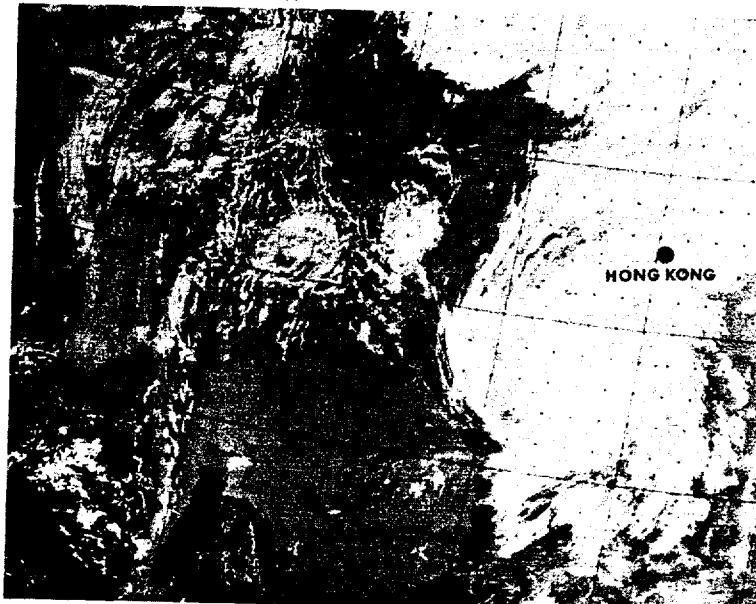


FIGURE 4-30. Typhoon Irma 270 nm south-southwest of Hong Kong 1 December 1974, 0124Z. (DMSP imagery)

### 3. TROPICAL CYCLONE CENTER FIX DATA

#### a. Discussion of Data:

The fix data computer print-out includes all sources of fix data for each tropical cyclone. Regardless of the type of fix, the first four columns of the print-out list the same information as follows:

FIX NO.	- Fixes are numbered sequentially.
TIME	- In day, hour and minutes (Zulu Time) of fix.
POSIT	- Position of storm center in degrees and tenths.
FIXCAT	- Type of fix used (SAT-satellite, P-aircraft penetration, LRDR-land radar, AC R-aircraft radar, SRDR-ship radar, CPA-station experiencing center passage, SCF-synoptic chart fix).

The format of the remainder of the print-out varies with the type of fix.

(1) SATELLITE - The primary satellite fix data was obtained from the various DMSP sites (Chapter II). Additional fix data was obtained from FLEWEAFAC and NESS, Suitland, Maryland (NOAA-2 prior to 16 Oct 1974, NOAA-3 from 16 Oct 74 to 17 Dec 1974, and NOAA-4 after 17 Dec 1974). Intensity estimates and trends (when available) are listed using the NESS classification system. If the source was DMSP data, the Position Code Number (PCN) appears followed by the acronym DMSP. If the source was NOAA-2, NOAA-3, or NOAA-4 data, the acronym NON DMSP appears followed by the type of satellite utilized and the CONF Number.

(2) RADAR - The latitude and longitude of radar site is given in the POSIT OF RADAR column. If available, plain language remarks appear after AC&W radar reports regarding tropical cyclone characteristics, size and accuracy of fix. All other land radar contain a 5-digit code group (if available) identical to the WMO radar code for reporting tropical cyclone characteristics with regard to size, development, and accuracy of location of the center or eye. A list of those land radar sites providing data in the fix print-out is given in Table 4-8.

(3) AIRCRAFT PENETRATION - This data was normally obtained at scheduled fix times. Additional reconnaissance aircraft fixes are sometimes made during peripheral data gathering legs between scheduled fixes. These additional fixes normally provide date, time, and position data only.

The categories containing information from reconnaissance aircraft are:

#### (a) ACCRY (Accuracy)

The estimated navigation (first number) and meteorological (second number) accuracies are expressed in nautical miles.

#### (b) FIX LVL (Fix Level)

A constant-pressure-surface flight level (listed in millibars) is normally maintained during a tropical cyclone fix mission. Low-level missions (1500 feet) are conducted at a constant, true altitude.

#### (c) MAX OBS FLT LVL WIND

Wind speed (kt) at flight level is measured by the AN/APN 147 doppler radar system aboard the WC-130 aircraft. Values entered in this category represent the maximum wind measured prior to obtaining a scheduled fix. This measurement may not represent the maximum wind because the aircraft samples only those portions of the central core region along the flight path. For this reason, the observed maximum wind may be significantly lower than the true maximum wind in the circulation (e.g., penetration through weak semicircle on first fix).

A limitation of the doppler radar system occasionally prevents the measurement of the maximum wind in intense typhoons. In areas of heavy rainfall, the radar may track energy reflected from precipitation rather than the sea surface, preventing accurate wind measurement. In these cases the wind speed will not be reported. Also, the doppler radar mount on the WC-130 restricts wind measurements to drift angles  $< 27^\circ$  if wind is normal to aircraft heading.

#### (d) MAX OBS SFC WIND

The maximum surface wind (knots) estimated from flight level is entered in this column. The observation is an estimate based on sea state. The sampling limitation noted in paragraph (c) also pertains to this category. In addition, availability of this data is dependent on the absence of undercast conditions. The position of maximum flight level winds and maximum observed surface winds do not necessarily coincide.

#### (e) OBS MIN SLP

The minimum observed sea level pressure is normally obtained from a drop-sonde released in the vortex center. If the ocean surface is visible, the dropsonde will be released over the center of the area of calm seas; otherwise it is released over a center determined by flight level winds. If the fix is made at 1500 feet, the sea level pressure is extrapolated from that level.

#### (f) MIN 700 MB HT

The minimum height of the 700 mb surface in the vortex center is recorded in decameters.

#### (g) FLT LVL TI/TO

Denotes maximum temperatures measured in the center (TI) and ambient temperature outside the center (TO). Ambient temperature is measured just prior to entering the wall cloud. Both temperature observations are in degrees Celsius and are made at flight level.

Reconnaissance aircraft seldom penetrate on the same azimuth from one fix to another. Thus, the position of TO normally varies from the center, both in bearing and range. This position is dependent on radar definition of the storm.

(h) EYE FORM/ORIENTATION/DIA

The shape and diameter (nautical miles) of the eye are determined by radar. This is reported only if the center is 50% or more surrounded by wall cloud. The orientation of the major axis concerns elliptical eyes. Abbreviations for the eye forms are as follows:

CIRC - Circular

ELIP - Elliptical

CONC - Concentric

TABLE 4-8. LAND RADAR SITES

<u>Location</u>	<u>Station No.</u>	<u>ICAO</u>	<u>Station Name</u>
14.2N 122.0E	98440	RPUD	DAET
14.6N 121.0E	98425		MANILA
16.4N 120.6E	98328	RPUB	BAGUIO
15.2N 120.5E	98327	RPMK	CLARK AB (USAF)
14.4N 122.6E			PARANAL AS (AC&W)
16.6N 120.3E			WALLACE AS (AC&W)
18.1N 120.5E			PARADES AS (AC&W)
13.6N 144.9E	91218	PGUA	ANDERSEN AFB (USAF)
26.1N 127.8E	47937		ITOKAZU
26.4N 127.8E	47931	RODN	KADENA AB (USAF)
26.2N 127.7E	47930	ROAHJ	NAHA AB (JASDF)
24.8N 125.3E	47927	ROMY	MIYAKOJIMA
24.3N 124.2E	47918	ROIG	ISHIGAKIJIMA
28.4N 129.5E	47909		NAZE
33.3N 134.2E	47899		MUROTOMISAKI
30.6N 131.0E	47869		TANEGASHIMA/NAKA
33.6N 130.5E	47808	RJFFJ	FUKUOKA/ITAZUKE (JASDF)
33.4N 130.4E	47806		FUKUOKA/SEFURISAN
34.3N 132.6E	47792		HIROSHIMA/HAIGAMINE
35.5N 133.1E	47791		MATSUE/MISAKAYAWA
35.8N 139.4E	47643	RJTJJ	IRUMA AB (JASDF)
35.7N 139.3E	47642	RJTY	YOKOTA AB (USAF)
35.4N 138.7E	47639		FUJISAN
35.2N 137.0E	47636		NAGOYA
33.2N 126.3E	47187	RKPM	CHEJU-DO/MOSLUPO AB
24.3N 120.6E	46770	RCQM	CCK AB/TAIWAN (USAF)
24.0N 121.6E	46763	RCYU	HUA-LIEN
22.6N 120.3E	46744		KAOHSIUNG
24.0N 121.6E	46699		HWALIEN
22.3N 114.2E	45005		HONG KONG OBSR.

b. FIX DATA PRINTOUTS:

TROPICAL STORM WANDA  
FIX POSITIONS FOR CYCLONE NO. 1  
0000Z 10 JAN TO 1200Z 13 JAN

FIX NO.	TIME	POSIT	FIX ACCRY	MAX OBS	MAX OBS	MIN	FLT	POSIT OF HAWAK	MSN NMHM
			CAT NAV-MET	CAT NAV-MET	SLP	700MB	LVL	EYE ORIEN-	EYE
			LVL	DIR VEL BRG RNG	HGT	SLP	HGT	TI/TI FORM	TI/TI FORM
1	000110Z	7.0N 128.3E	SAT	(T1.5/1.5 / 00.5/24HRS)	NOAA-2	(CONF 03)			
2	000110Z	7.4N 128.7E	SAT	(T1.5/1.5 / 0 / 00.5/24HRS)	PCN 5	DMSP			
3	090015Z	8.1N 129.1E	SAT	(T3.0/3.0 / 01.0/24HRS)	NOAA-2	(CONF 01)			
4	090016Z	8.0N 129.0E	SAT	(T2.0/2.0 / 01.0/24HRS)	NOAA-2	(CONF 02)			
5	090339Z	8.0N 129.8E	SAT	(T1.5/1.5 / 0 / 00.5/24HRS)	PCN 5	DMSP			
6	091148Z	9.7N 130.2E	SAT		PCN 5	DMSP			
7	091622Z	10.0N 130.5E	SAT		PCN 5	DMSP			
8	092249Z	9.2N 131.3E	SAT	(T2.0/2.0 / 0 / 00.5/24HRS)	PCN 5	DMSP			
9	100110Z	11.0N 131.0E	SAT	(T3.0/3.0 / 0 / 00.5/24HRS)	NOAA-2	(CONF 01)			
10	100111Z	11.0N 131.0E	SAT	(T3.0/3.0 / 01.0/24HRS)	NOAA-2	(CONF 02)			
11	100115Z	10.0N 131.0E	P - 15	700 270 55 170	45	55 170	998	305 14	- - - - -
12	100325Z	9.9N 132.2E	SAT	(T2.0/2.0 / 00.5/24HRS)	PCN 3	DMSP			1
13	100325Z	10.0N 132.1E	SAT	(T2.0/2.0 / 0 / 00.5/24HRS)	PCN 3	DMSP			1
14	100415Z	10.3N 131.9E	P 2 15	700 270 55 190	40	60 180	992	302 14	- - - - -
15	101131Z	11.8N 133.0E	SAT		PCN 5	DMSP			
16	101131Z	10.8N 133.0E	SAT		PCN 5	DMSP			
17	101535Z	11.5N 133.5E	AC H -						
18	101608Z	11.8N 132.0E	SAT		PCN 5	DMSP			
19	101608Z	11.3N 131.8E	SAT	(IN DATA )	PCN 5	DMSP			
20	110010Z	12.5N 133.5E	SAT	(T4.0/4.0 / 0 / 00.5/24HRS)	NOAA-2				
21	110012Z	12.8N 133.8E	SAT	(T3.0/3.0 / 01.0/24HRS)	PCN 5	DMSP			
22	110012Z	12.9N 133.5E	SAT	(T3.5/3.5 / 01.0/24HRS)	PCN 3	DMSP			
23	110012Z	12.7N 133.9E	SAT	(T3.0/3.0 / 02.0 / 00.5/24HRS)	PCN 5	DMSP			
24	110910Z	13.3N 133.9E	SAT	(T3.0/3.0 / 0 / 00.5/24HRS)	PCN 3	DMSP			
25	111030Z	13.6N 133.9E	SAT	(T3.5/3.5 / 0 / 00.5/24HRS)	PCN 5	DMSP			
26	1110430Z	12.5N 133.9E	P 5 20	1500 - - -	- 25	120	996	- 25	- - - - -
27	111503Z	12.0N 136.8E	SAT		PCN 3	DMSP			
28	112213Z	13.4N 137.8E	SAT	(T3.0/3.0 / 0 / 00.5/24HRS)	PCN 3	DMSP			
29	112309Z	14.0N 138.0E	SAT	(T2.0/2.0 / 0 / 02.0/24HRS)	NOAA-2	(CONF 02)			
30	112309Z	14.0N 137.8E	SAT	(T2.0/2.0 / 0 / 02.0/24HRS)	NOAA-2	(CONF 01)			
31	112354Z	13.5N 138.0E	SAT	(T2.0/2.0 / 0 / 00.5/24HRS)	PCN 5	DMSP			
32	112354Z	13.7N 138.2E	SAT	(T2.0/2.0 / 0 / 00.5/24HRS)	PCN 3	DMSP			
33	120007Z	13.7N 138.1E	P 5 10	700 160 30 100	120	30 00	999	308 12	- - - - -
34	120255Z	13.5N 138.3E	SAT	(T2.0/2.0 / 01.0/24HRS)	PCN 5	DMSP			7
35	120255Z	13.5N 138.6E	SAT	(T2.0/2.0 / 01.5 / 00.5/24HRS)	PCN 5	DMSP			
36	120255Z	13.4N 138.0E	SAT	(T1.5/1.5 / 0 / 00.5/24HRS)	PCN 5	DMSP			
37	120310Z	14.0N 138.3E	P 5 10	1500 - - -	-	-	999	- 25	- - - - -
38	120900Z	14.5N 139.3E	P 10 10	700 120 35 120	60	35 330	993	303 12 13	- - - - -
39	121054Z	14.6N 139.8E	SAT		PCN 5	DMSP			8
40	121054Z	14.1N 139.5E	SAT		PCN 5	DMSP			
41	121539Z	14.6N 140.4E	SAT		PCN 5	DMSP			
42	121539Z	14.7N 141.1E	SAT		PCN 5	DMSP			
43	121539Z	15.5N 141.3E	SAT		PCN 5	DMSP			
44	122154Z	15.0N 141.7E	SAT	(T2.0/2.0 / 01.0/24HRS)	PCN 5	DMSP			
45	122158Z	14.8N 142.2E	P 5 10	1500 360 35 320	70	30 20	998	- 20	- - - - -
46	122336Z	14.4N 142.0E	SAT	(T2.0/2.0 / 0 / 00.5/24HRS)	PCN 3	DMSP			9
47	122336Z	15.0N 142.6E	SAT	(T2.0/2.0 / 0 / 00.5/24HRS)	PCN 5	DMSP			
48	130000Z	17.5N 145.0E	SAT	(T2.0/2.0 / 0 / 00.5/24HRS)	NOAA-2	(CONF 01)			
49	130241Z	14.8N 143.0E	SAT	(T2.0/2.0 / 0 / 00.5/24HRS)	PCN 3	DMSP			
50	130241Z	14.8N 143.0E	SAT	(T2.0/2.0 / 0 / 00.5/24HRS)	PCN 5	DMSP			
51	130241Z	14.7N 143.1E	SAT	(T1.5/1.5 / 0 / 00.5/24HRS)	PCN 5	DMSP			
52	130815Z	15.9N 145.6E	P 1 5	1500 40 30 320	30	20 140	1003	- 26	- - - - -

TROPICAL STORM AMY  
FIX POSITIONS FOR CYCLONE NO. 2  
1200Z 14 MAR TO 1200Z 19 MAR

FIX NO.	TIME	POSIT	FIX ACCRY	MAX OBS	MAX OBS	MIN	FLT	POSIT OF HAWAK	MSN NMHM
			CAT NAV-MET	CAT NAV-MET	SLP	700MB	LVL	EYE ORIEN-	EYE
			LVL	DIR VEL BRG RNG	HGT	SLP	HGT	TI/TI FORM	TI/TI FORM
1	122235Z	8.2N 145.4E	SAT	(IN DATA )	PCN 4	DMSP			
2	132217Z	8.1N 143.2E	SAT	(T1.0/1.0 / 01.0/24HRS)	PCN 3	DMSP			
3	141059Z	8.3N 142.4E	SAT		PCN 3	DMSP			
4	142340Z	8.7N 142.1E	SAT	(T1.5/1.5 / 00.5/24HRS)	PCN 3	DMSP			
5	150043Z	8.8N 138.7E	SAT	(T2.0/2.0 / 01.0/24HRS)	NOAA-2	(CONF 01)			
6	151040Z	9.1N 141.2E	SAT		PCN 5	DMSP			
7	152322Z	10.3N 137.0E	SAT	(T2.0/2.0 / 0 / 00.5/24HRS)	PCN 5	DMSP			
8	152330Z	10.7N 137.0E	SAT	(T2.0/2.0 / 0 / 00.5/24HRS)	NOAA-2	(CONF 01)			
9	161112Z	11.4N 136.5E	P - 15	700 - - -	-	-	996	305	- - - - -
10	161204Z	11.7N 136.2E	SAT		PCN 5	DMSP			3
11	161410Z	11.7N 136.3E	P 5 10	700 290 25 200	20	- -	1001	308 9 9	- - - - -
12	162304Z	13.1N 139.8E	SAT	(T2.5/2.5 / 00.5/24HRS)	PCN 3	DMSP			3
13	170022Z	14.0N 136.9E	SAT	(T3.0/3.0 / 00.5/24HRS)	NOAA-2	(CONF 01)			
14	170425Z	14.0N 137.2E	P 3 3	1500 180 50 140	90	30 240	12 990	- 24	- - - - -
15	170905Z	14.9N 137.0E	P 5 5	1500 40 35 320	60	3 20	50 992	- 24	- - - - -
16	171145Z	15.9N 138.3E	SAT		PCN 6	DMSP			5
17	171513Z	15.6N 138.9E	P 3 5	700 210 52 110	120	-	996	304 14 10	- - - - -
18	172246Z	17.4N 140.0E	SAT	(T2.5/2.5 / 0 / 00.5/24HRS)	PCN 5	DMSP			6
19	172246Z	17.0N 140.1E	SAT	(T2.0/2.0 / 0 / 00.5/24HRS)	PCN 5	DMSP			
20	173217Z	17.7N 149.5E	SAT	(T3.0/3.0 / 0 / 00.5/24HRS)	NOAA-2	(CONF 01)			
21	180143Z	17.4N 140.1E	SAT	(T2.0/2.0 / 0 / 00.5/24HRS)	PCN 3	DMSP			
22	180314Z	17.8N 141.1E	P 5 B	1500 20 50 340	50	3 330	30 995	- 22	- - - - -
23	181272Z	14.3N 143.8E	SAT		PCN 5	DMSP			7
24	181535Z	14.4N 144.5E	P 20 10	700 80 35 40	45	-	987	298 12 11	- - - - -
25	182030Z	21.0N 146.4E	P 20 10	700 310 40 -	-	60 240	10 17 15	-	8
26	182222Z	22.9N 149.0E	SAT	(T2.0/3.0 / 0 / 01.0/24HRS)	NOAA-2	(CONF 02)			8
27	182227Z	22.1N 149.1E	SAT	(T3.0/3.0 / 0 / 00.5/24HRS)	PCN 3	DMSP			
28	190652Z	23.5N 151.0E	P 5 5	1500 - - -	-	3 280	25 993	- 20	- - - - -
29	190815Z	23.6N 151.6E	P - 1500	- - -	-	-	993	-	9
30	190912Z	24.3N 151.7E	P 5 2	1500 270 30 34	-	-	166 14 -	- - - - -	9

TROPICAL STORM BABE  
FIX POSITIONS FOR CYCLONE NO. 3  
0000Z 26 APR TO 0600Z 02 MAY

FIX NO.	TIME	POSIT	FIX ACCHY	FIX CAT	MAX OBS LVL	MAX OBS SFC WIND	OBS MIN TUMBL	MIN LVL	FLT EYE ORIEN-	PUSIT OF	MSN
			NAV-MET	LVL	DIR VEL BRG RNG	DIR VEL BRG RNG	SLP	MGT	T/LD FORM IATION	RADAR	NMBR
1	232143Z	18.8N 153.8E	SAT	(11.5/1.5 /00.5/24HRS)	NOAA-2	(CONF 02)					
2	242151Z	9.3N 156.3E	SAT	(11.5/1.5 /S /24HRS)	NOAA-2	(CONF 01)					
3	250148Z	7.4N 152.6E	SAT	(11.5/1.5 /00.5/24HRS)	PCN 5	DMSP					
4	251003Z	9.3N 149.5E	SAT		PCN 6	DMSP					
5	251429Z	9.3N 149.3E	SAT		PCN 6	DMSP					
6	252245Z	11.4N 148.4E	SAT	(12.0/2.0 /00.5/24HRS)	PCN 5	DMSP					
7	252259Z	11.0N 148.7E	SAT	(12.0/2.0 /00.5/24HRS)	NOAA-2	(CONF 02)					
8	252301Z	9.2N 147.5E	P 1U	20 1500 80 40 350 20 20 350 90 1002 - 22 42 - - -							1
9	260129Z	11.6N 147.6E	SAT	(12.0/2.0 /00.5/24HRS)	PCN 5	DMSP					
10	260320Z	9.9N 146.9E	P	3 10 1500 190 25 110 100 15 - - 1001 - 22 - - -							1
11	260835Z	10.9N 146.1E	P	5 10 700 40 30 320 80 15 340 120 1002 309 11 10 - - -							2
12	261127Z	12.4N 145.8E	SAT		PCN 6	DMSP					
13	261318Z	11.7N 145.8E	P	7 5 700 350 35 290 50 - - - 1002 309 12 10 - - -							2
14	261410Z	12.5N 145.6E	SAT		PCN 6	DMSP					
15	261519Z	11.9N 145.4E	P	7 5 700 90 30 360 40 - - - 999 307 14 10 - - -							2
16	261820Z	12.2N 145.5E	P	5 6 700 320 30 280 38 - - - 990 306 12 - - -							3
17	262104Z	12.2N 145.5E	P	5 1 700 210 30 160 60 20 90 10 998 308 13 - - -							3
18	262145Z	12.1N 145.3E	LDRK	- POSSIBLE CENTER, 15 DEG SPIRAL OVERLAY, NEG. WALL CLOUD							13.0N 144.9E
19	262214Z	12.2N 145.2E	SAT	(12.5/2.5 / / HRS)	NOAA-2						
20	262220Z	12.4N 145.3E	SAT	(13.0/3.0 /-01.0/24HRS)	PCN 3	DMSP					
21	262226Z	12.6N 145.4E	SAT	(12.0/2.0 /S / HRS)	PCN 3	DMSP					
22	270005Z	12.8N 145.3E	P	5 5 1500 110 25 360 70 20 270 10 1001 - 24 - - -							3
23	270111Z	12.7N 145.4E	SAT	(13.0/3.0 /-01.0/24HRS)	PCN 3	DMSP					
24	270540Z	13.5N 145.3E	LDRK	- POSSIBLE CENTER, 20 DEG SPIRAL OVERLAY, WALL CLOUD FORMING ALL QUADS							13.0N 144.9E
25	270610Z	13.5N 145.5E	LDRK	- ELLIP EYE 3A16 OPEN NE							13.0N 144.9E
26	270859Z	13.6N 145.6E	P	5 3 700 180 20 90 10 25 240 10 996 306 12 9 - - -							4
27	271108Z	14.3N 146.4E	SAT		PCN 6	DMSP					
28	271240Z	13.8N 145.9E	LDRK	- POSSIBLE CENTER, 15 DEG SPIRAL OVERLAY, WALL CLOUD 3W-NW							13.0N 144.9E
29	271434Z	14.3N 145.8E	P	4 8 700 280 40 220 180 - - - - 10 9 - - -							4
30	272208Z	15.9N 145.9E	SAT	(12.0/3.0 /-01.0/24HRS)	PCN 5	DMSP					
31	272322Z	15.5N 145.5E	SAT	(12.0/2.5 /HRS)	NOAA-2	(CONF 01)					
32	280052Z	16.1N 145.6E	SAT	(12.0/3.0 /-01.0/24HRS)	PCN 5	DMSP					
33	280325Z	16.1N 145.6E	P	2 5 700 80 23 350 25 25 160 35 995 303 14 - - -							5
34	280925Z	16.5N 145.6E	P	2 10 700 300 25 210 30 20 19 95 996 306 13 - - -							5
35	281050Z	17.0N 145.4E	SAT		PCN 6	DMSP					
36	281332Z	17.7N 145.7E	SAT		PCN 4	DMSP					
37	281439Z	17.4N 145.7E	P	5 10 700 300 20 270 35 - - - 995 305 13 - - -							5
38	282150Z	16.0N 144.9E	SAT	(13.5/3.5/-01.5/24HRS)	PCN 3	DMSP					
39	282150Z	17.6N 145.2E	SAT	(13.5/3.5/-01.5/24HRS)	PCN 3	DMSP					
40	282158Z	17.8N 145.1E	P	2 2 700 320 25 250 30 25 230 200 - 307 10 10 - - -							6
41	282239Z	17.8N 145.2E	SAT	(14.0/4.0 /02.0/24HRS)	NOAA-2	(CONF 01)					
42	282332Z	18.1N 145.0E	SAT	(13.5/3.5/-01.5/24HRS)	PCN 3	DMSP					
43	290215Z	18.4N 145.1E	SAT	(13.5/3.5/-01.5/24HRS)	PCN 3	DMSP					
44	290415Z	18.5N 144.9E	SAT	(13.5/3.5,-01.5/24HRS)	PCN 3	DMSP					
45	290753Z	18.8N 145.2E	P	5 5 700 280 40 210 40 25 25 497 305 14 12 - - -							7
46	291032Z	19.3N 144.3E	SAT		PCN 3	DMSP					
47	291052Z	19.0N 144.2E	SAT		PCN 6	DMSP					
48	291443Z	19.7N 145.3E	P	5 5 700 180 55 90 40 - - - 985 297 16 13 - - -							7
49	291456Z	14.2N 144.7E	SAT		PCN 5	DMSP					
50	291456Z	19.3N 145.0E	SAT		PCN 3	DMSP					
51	292313Z	20.1N 145.0E	SAT	(13.5/3.5,-S /24HRS)	PCN 1	DMSP					
52	292313Z	20.1N 144.8E	SAT	(14.0/4.0 /-01.0/24HRS)	PCN 1	DMSP					
53	292345Z	20.0N 145.0E	SAT	(13.0/3.0 /-01.0/24HRS)	NOAA-2	(CONF 02)					
54	300157Z	20.5N 144.8E	SAT	(13.5/3.5,-S /24HRS)	PCN 1	DMSP					
55	300157Z	20.3N 144.6E	SAT	(14.0/4.0 /-01.0/24HRS)	PCN 1	DMSP					8
56	300404Z	20.5N 144.3E	P	2 2 1500 330 35 240 20 40 240 20 983 - 25 - - -							8
57	300915Z	21.3N 144.3E	P	5 5 700 320 25 250 35 5 20 50 983 295 15 - - -							8
58	301155Z	21.4N 144.9E	SAT		PCN 3	DMSP					
59	301437Z	21.7N 145.2E	SAT		PCN 3	DMSP					
60	301510Z	22.1N 144.4E	P	10 10 700 270 70 180 50 - - - 292 10 17 - - -							9
61	302255Z	22.0N 140.3E	SAT	(13.0/3.5 /W0.5/24HRS)	PCN 3	DMSP					
62	310138Z	23.2N 146.9E	SAT	(13.0/3.5 /W0.5/24HRS)	PCN 3	DMSP					9
63	310250Z	23.6N 146.1E	P	10 5 700 250 75 180 30 70 180 60 984 293 14 10 - - -							
64	310820Z	25.2N 147.0E	P	10 5 700 290 80 200 35 30 240 35 983 294 16 13 - - -							10
65	311137Z	26.1N 147.3E	SAT		PCN 3	DMSP					
66	311419Z	26.5N 148.0E	SAT		PCN 3	DMSP					
67	312216Z	28.8N 151.0E	SAT	(13.0/3.0 /W2.0/48HRS)	NOAA-2	(CONF 01)					
68	312237Z	30.0N 151.2E	SAT	(12.0/3.0 /W1.0/24HRS)	PCN 3	DMSP					
69	312237Z	30.0N 151.2E	SAT	(12.0/2.5 /W0.5/ HRS)	PCN 3	DMSP					
70	312315Z	30.0N 151.2E	P	10 10 700 - - - - /U 230 120 994 301 13 - - -							11
71	020419Z	31.0N 152.7E	SAT	(12.0/3.0 /W1.0/24HRS)	PCN 3	DMSP					
72	020120Z	30.9N 152.9E	SAT	(12.0/2.5 /W0.5/ HRS)	PCN 3	DMSP					
73	021119Z	29.4N 157.0E	SAT		PCN 6	DMSP					

TYPHOON CARLA  
FIX POSITIONS FOR CYCLONE NO. 4  
0000Z 02 MAY TO 0600Z 07 MAY

FIX NO.	TIME	PUSIT	FIX CAT	ACRY	FIX LVL	FLT LVL	WIND	SFC WIND	MAX UBS	MAX UBS	OBS	MIN	700MB	LVL	FLT	PUSIT			MSN	NM8M	
																NAV-MET	LVL	DIR	VEL	BRG	RNG
1	282150Z	5.0N 158.4E	SAT	(T1.5/1.5 /D0.5/24HRS)					PCN 3	DNSP											
2	291315Z	5.5N 157.6E	SAT						PCN 6	DNSP											
3	292132Z	6.0N 156.6E	SAT	(T1.5/1.5 /S /24HRS)					PCN 6	DNSP											
4	302108Z	8.0N 156.0E	SAT	(T2.0/2.0 /D1.0/24HRS)					NOAA-2		(CONF 03)										
5	302235Z	8.1N 155.0E	SAT	(T1.5/1.5 /S /24HRS)					PCN 5	DNSP											
6	010138Z	9.0N 154.5E	SAT	(T1.5/1.5 /S /24HRS)					PCN 5	DNSP											
7	010955Z	9.8N 152.3E	SAT						PCN 6	DNSP											
8	011419Z	10.4N 151.6E	SAT						PCN 5	DNSP											
9	011419Z	10.5N 151.5E	SAT	(IR DATA					PCN 6	DNSP											
10	012221Z	12.2N 150.3E	SAT	(T2.0/2.0 /S /24HRS)					NOAA-2		(CONF 01)										
11	012237Z	11.9N 150.3E	SAT	(T2.0/2.0 /D0.5/24HRS)					PCN 3	DNSP											
12	020119Z	12.5N 149.9E	SAT	(T2.0/2.0 /D0.5/24HRS)					PCN 3	DNSP											
13	020435Z	12.6N 149.2E	P	5 5 1500	180	45	90	15	37	90	15	498	-	25	-	-	-	-	-	1	
14	020930Z	12.8N 148.3E	P	5 5 700	90	50	10	60	3	10	60	-	306	11	-	-	-	-	-	1	
15	021119Z	13.0N 148.4E	SAT						PCN 3	DNSP											
16	021119Z	12.9N 147.8E	SAT	(IR DATA					PCN 4	DNSP											
17	021401Z	13.4N 147.6E	SAT						PCN 3	DNSP											
18	021401Z	13.4N 146.9E	SAT						PCN 4	DNSP											
19	021435Z	13.4N 147.4E	P	- 5 700	340	35	250	15	-	-	-	996	306	15	11	-	-	-	-	2	
20	021620Z	13.4N 147.5E	P	- - 700	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	
21	021818Z	13.6N 147.3E	P	10 5 700	320	30	-	-	-	-	-	992	301	13	-	-	-	-	-	3	
22	022103Z	13.6N 147.1E	P	5 5 700	130	60	30	35	50	-	-	988	299	15	8	-	-	-	-	3	
23	022219Z	13.9N 147.0E	SAT	(T3.5/3.5 /D1.5/24HRS)					PCN 3	DNSP											
24	022219Z	14.2N 147.2E	SAT	(T3.0/3.0 /S /24HRS)					PCN 3	DNSP											
25	022350Z	13.7N 146.2E	SAT	(T3.5/3.5 /D1.5/24HRS)					NOAA-2		(CONF 01)										
26	030101Z	14.1N 146.3E	SAT	(T3.5/3.5 /D1.5/24HRS)					PCN 3	DNSP											
27	030351Z	14.5N 146.2E	P	5 10 700	260	28	170	25	40	170	45	991	301	14	9	-	-	-	-	3	
28	030843Z	15.1N 145.5E	P	2 5 700	290	35	220	50	3	220	45	994	304	12	8	-	-	-	-	*	
29	031100Z	15.5N 145.1E	SAT						PCN 3	DNSP											
30	031100Z	14.9N 144.8E	SAT						PCN 4	DNSP											
31	031342Z	15.5N 144.6E	SAT						PCN 3	DNSP											
32	031447Z	15.6N 144.9E	P	2 5 700	120	45	70	35	-	-	-	989	301	13	12	-	-	-	-	4	
33	032200Z	16.1N 144.1E	SAT	(T3.5/3.5 /S /24HRS)					PCN 3	DNSP											
34	032200Z	15.7N 144.2E	SAT	(T3.0/3.0 /S /24HRS)					PCN 3	DNSP											
35	032243Z	16.1N 144.6E	SAT	(T4.5/4.5 /D1.0/24HRS)					NOAA-2		(CONF 01)										
36	040224Z	16.6N 144.2E	SAT	(T3.5/3.5 /S /24HRS)					PCN 1	DNSP											
37	040224Z	16.1N 144.2E	SAT	(T5.0/5.0 / / HRS)					PCN 1	DNSP											
38	040330Z	16.3N 144.2E	P	5 5 700	320	35	230	30	5	250	10	978	291	15	10	-	-	-	-	5	
39	040830Z	17.0N 143.9E	P	5 5 700	150	60	130	60	50	60	12	973	285	17	13	CTRC	-	-	-	5	
40	041041Z	17.1N 143.7E	SAT						PCN 1	DNSP											
41	041042Z	17.3N 143.5E	SAT						PCN 2	DNSP											
42	041505Z	17.5N 143.9E	SAT						PCN 1	DNSP											
43	041505Z	17.5N 143.9E	SAT						PCN 1	DNSP											
44	042048Z	18.1N 143.7E	P	3 3 700	280	90	220	20	90	240	15	963	278	17	12	CTRC	-	-	-	6	
45	042324Z	18.5N 143.9E	SAT	(T4.5/4.5 /D0.2/24HRS)					PCN 1	DNSP											
46	042324Z	18.4N 144.0E	SAT	(T5.0/5.0 / / HRS)					PCN 1	DNSP											
47	052350Z	18.4N 143.9E	SAT	(T5.5/5.5 /D1.0/24HRS)					NOAA-2		(CONF 01)										
48	050206Z	19.1N 143.9E	SAT	(T4.5/4.5 /D1.0/24HRS)					PCN 1	DNSP											
49	050206Z	19.0N 143.9E	SAT	(T6.0/6.0 /D1.0/24HRS)					PCN 1	DNSP											
50	050242Z	19.1N 143.7E	P	4 3 700	280	100	280	15	100	280	15	963	278	17	12	CTRC	-	-	-	6	
51	050830Z	20.4N 144.0E	P	5 2 700	260	80	190	35	80	240	10	965	275	23	16	CTRC	-	-	-	7	
52	051024Z	20.3N 144.1E	SAT						PCN 1	DNSP											
53	051025Z	21.3N 144.2E	SAT						PCN 1	DNSP											
54	051446Z	21.6N 145.2E	SAT						PCN 3	DNSP											
55	051447Z	21.3N 144.9E	SAT						PCN 1	DNSP											
56	051510Z	21.4N 144.8E	P	10 2 700	330	60	240	30	-	-	-	969	282	19	11	CTRC	-	-	-	7	
57	052402Z	23.7N 145.4E	SAT	(T5.0/5.0 /W0.5/24HRS)					NOAA-2		(CONF 01)										
58	052405Z	23.7N 145.7E	SAT	(T4.5/4.5 /W / 24HRS)					PCN 3	DNSP											
59	052405Z	23.4N 145.6E	SAT	(T4.5/5.5 /W1.5/21HRS)					PCN 3	DNSP											
60	060147Z	24.3N 146.0E	SAT	(T4.5/4.5 /W / 24HRS)					PCN 3	DNSP											
61	060147Z	24.1N 146.0E	SAT	(T4.5/5.5 /W1.5/21HRS)					PCN 3	DNSP											
62	060421Z	25.0N 145.8E	P	10 2 700	330	50	240	10	70	00	35	983	293	14	-	-	-	-	-	8	
63	060845Z	25.9N 147.0E	P	10 2 700	240	80	150	70	4	300	20	984	294	14	-	-	-	-	-	8	
64	061147Z	26.8N 148.4E	SAT						PCN 3	DNSP											
65	061147Z	26.5N 148.2E	SAT						PCN 3	DNSP											
66	061428Z	27.2N 149.1E	SAT						PCN 3	DNSP											
67	061428Z	27.0N 148.8E	SAT						PCN 3	DNSP											
68	062106Z	28.8N 151.3E	SAT	(T4.5/4.5 /W / 24HRS)					PCN 3	DNSP											
69	062247Z	28.9N 151.8E	SAT	(T2.5/3.5 /W2.0/24HRS)					PCN 3	DNSP											
70	062247Z	29.0N 151.8E	SAT	(T4.5/5.5 /W1.5/21HRS)					PCN 3	DNSP											
71	070128Z	29.6N 153.1E	SAT	(T2.5/3.5 /W2.0/24HRS)					PCN 3	DNSP											
72	070128Z	29.3N 153.2E	SAT	(T2.5/3.5 /W2.0/26HRS)</td																	

TROPICAL DEPRESSION 5  
FIX POSITIONS FOR CYCLONE NO. 5  
0600Z 07 JUN TO 0600Z 08 JUN

FIX NO.	TIME	POSIT	MAX OBS	MAX OBS	MIN	FLT	POSIT OF RADAR	MSN NMBR
		CAT NAV-MET	FLT LVL WIND	SFC WIND	700MB	LVL	EYE URINEN TATION DIA	
		LVL	DIR VEL BRG RNG	VEL BRG RNG	SLP	HGT	T1/T0 FORM	
1	060402Z	18.4N 113.5E	SAT	(T1.0/1.0 /01.0/24HRS)	PCN 5	DMS		
2	070112Z	19.9N 113.3E	SAT	(T2.5/2.5 /01.5/21HRS)	PCN 3	DMS		
3	070344Z	20.1N 112.8E	SAT	(T2.5/2.5 /01.5/21HRS)	PCN 3	DMS		
4	080325Z	21.0N 111.0E	SAT	(T2.0/2.0 / / HRS)	PCN 5	DMS		
5	080325Z	21.0N 111.3E	SAT	(T2.0/2.5 /01.5/21HRS)	PCN 5	DMS		
6	080325Z	20.4N 110.7E	SAT	(T2.0/2.0 / / HRS)	PCN 5	DMS		
7	081335Z	21.2N 109.7E	SAT		PCN 6	DMS		
8	081606Z	20.8N 108.8E	SAT		PCN 6	DMS		
9	081607Z	21.7N 109.5E	SAT		PCN 6	DMS		

TYPHOON DINAH  
FIX POSITIONS FOR CYCLONE NO. 6  
0000Z 08 JUN TO 0600Z 14 JUN

FIX NO.	TIME	POSIT	MAX OBS	MAX OBS	MIN	FLT	POSIT OF RADAR	MSN NMBR
		CAT NAV-MET	FLT LVL WIND	SFC WIND	700MB	LVL	EYE URINEN TATION DIA	
		LVL	DIR VEL BRG RNG	VEL BRG RNG	SLP	HGT	T1/T0 FORM	
1	042225Z	5.5N 146.5E	SAT	(T1.0/1.0 /01.0/24HRS)	PCN 5	DMS		
2	050239Z	6.7N 144.0E	SAT	(T1.0/1.0 /01.0/24HRS)	PCN 5	DMS		
3	051107Z	7.5N 143.3E	SAT		PCN 5	DMS		
4	051329Z	8.0N 142.7E	SAT		PCN 5	DMS		
5	052349Z	10.4N 139.2E	SAT	(T2.5/2.5 /01.5/24HRS)	PCN 3	DMS		
6	060221Z	11.2N 138.5E	SAT	(T2.5/2.5 /01.5/24HRS)	PCN 5	DMS		
7	060659Z	10.4N 138.8E	P 5 5 1500 260 25 21D 15	15 25 10 15 1009 - - 26 - - -				2
8	061049Z	11.1N 137.4E	SAT		PCN 6	DMS		
9	061230Z	11.3N 137.3E	SAT		PCN 6	DMS		
10	061502Z	12.0N 136.6E	SAT		PCN 5	DMS		
11	062120Z	11.6N 135.8E	P 2 1 1500 120 25 60 110 25 360 30 1001 - 24 - - - -				3	
12	062330Z	12.1N 135.9E	SAT	(T1.5/2.5 /01.0/24HRS)	PCN 3	DMS		
13	062355Z	12.0N 135.2E	SAT	(T1.0/4.0 /01.0/24HRS)	NOAA-2		(CONF 02)	
14	070113Z	12.3N 135.1E	P 2 1 700 110 35 30 12 30 - - - - - - -				3	
15	070202Z	12.5N 135.3E	SAT	(T1.5/2.5 /01.0/24HRS)	PCN 5	DMS		
16	071212Z	12.5N 132.7E	SAT		PCN 5	DMS		
17	071444Z	12.7N 131.2E	SAT		PCN 5	DMS		
18	072312Z	13.2N 128.4E	SAT	(T2.5/2.5 /01.0/24HRS)	PCN 5	DMS		
19	072312Z	13.1N 128.6E	SAT	(T2.5/2.5 / / HRS)	PCN 5	DMS		
20	072350Z	13.0N 128.2E	SAT	(T4.0/4.0 /01.0/24HRS)	NOAA-2		(CONF 02)	
21	080114Z	13.0N 128.1E	P 15 2 1500 300 50 300 25 4 300 20 991 - - 26 - - -				4	
22	080325Z	12.8N 128.1E	SAT	(T2.5/2.5 /01.0/24HRS)	PCN 3	DMS		
23	080325Z	12.7N 128.1E	SAT	(T3.0/3.0 / / HRS)	PCN 3	DMS		
24	080330Z	13.0N 127.8E	P 15 2 1500 300 60 200 20 60 190 25 979 - - 26 - - -				4	
25	080915Z	13.4N 127.4E	P 5 2 700 130 40 80 32 50 80 42 986 300 20 - - - -				5	
26	081154Z	13.4N 126.5E	SAT		PCN 5	DMS		
27	081435Z	13.8N 126.6E	P 5 3 700 310 40 190 85 - - - 989 300 15 - - - -				5	
28	081607Z	13.6N 125.2E	SAT		PCN 6	DMS		
29	082146Z	14.3N 125.5E	P 5 2 700 140 40 40 60 3 40 60 489 302 20 - - -				6	
30	090020Z	13.5N 125.0E	SAT	(T4.5/4.5 / /25HRS)	NOAA-2		(CONF 02)	
31	090035Z	14.5N 125.3E	SAT	(T3.5/3.5 /00.5/21HRS)	PCN 3	DMS		
32	090307Z	14.9N 124.8E	SAT	(T4.0/4.0 /01.5/28HRS)	PCN 3	DMS		
33	091158Z	14.3N 123.4E	P 5 5 700 60 50 330 70 - - - 294 - 14 - - -				7	
34	091317Z	14.4N 122.9E	SAT		PCN 6	DMS		
35	091415Z	14.3N 123.5E	LRDR	- POSSIBLE EYE+15 DEG SPINAL OVERLAY			14.4N 122.6E	
36	091435Z	14.4N 123.5E	LRDR	- POSSIBLE EYE+15 DEG SPINAL OVERLAY			14.4N 120.6E	
37	091500Z	14.7N 123.2E	LRDR	- FAIR FIX, EYE NOT VISIBLE			14.4N 122.6E	
38	091506Z	14.5N 122.6E	LRDR	- GOOD FIX, 15 DEG SPINAL OVERLAY, POSSIBLE EYE			15.2N 120.6E	
39	091523Z	14.6N 123.1E	P 5 5 700 40 70 30 525 - - - 977 291 - 15 - - -				7	
40	091548Z	15.0N 123.4E	SAT		PCN 1	DMS		
41	091548Z	14.8N 122.9E	SAT		PCN 6	DMS		
42	091548Z	15.0N 123.3E	SAT	(IN DATA )	PCN 3	DMS		
43	091600Z	14.8N 123.0E	LRDR	- CIRCULAR EYE UIAM 34 NM			14.4N 122.6E	
44	091608Z	14.5N 122.5E	LRDR	- GOOD FIX, 90 PERCENT WALL CLOUD			15.2N 120.6E	
45	091638Z	14.6N 122.6E	LRDR	- FAIR FIX, ELLIPTICAL EYE 3 ALA NM, 90 PERCENT WALL CLOUD			15.2N 120.6E	
46	091705Z	14.7N 122.3E	LRDR	- FAIR FIX, NEG EYE, 15 DEG SPINAL OVERLAY			15.2N 120.6E	
47	091808Z	14.7N 122.3E	LRDR	- FAIR FIX, NEG EYE, 15 DEG SPINAL OVERLAY			15.2N 120.6E	
48	091838Z	14.7N 122.3E	LRDR	- FAIR FIX, NEG EYE, 15 DEG SPINAL OVERLAY			15.2N 120.6E	
49	091938Z	14.3N 122.0E	LRDR	- FAIR FIX, NEG EYE, 15 DEG SPINAL OVERLAY			15.2N 120.6E	
50	091945Z	15.0N 122.6E	LRDR	- CIRCULAR EYE 32 NM DIAM, WALL CLOUD OPEN SOUTH			14.4N 122.6E	

TYPHOON DINAH  
FIX POSITIONS FOR CYCLONE NO. 6  
0000Z 08 JUN TO 0600Z 14 JUN

FIA NO.	TIME	POSIT	CAT	ACCHY	FIX	FLT	MAX OBS	MAX UBS	OBS	MIN	FLT	EYE	URIEN-	EYE	PUSIT	UF	MSN NMHD
51	091945Z	15.1N 122.7E	LHDR	- POSSIBLE EYE												16.4N	120.6E
52	092000Z	15.0N 122.6E	LHDR	- CIRCULAR EYE 30 NM DIAM, 100 PERCENT WALL CLOUD												14.4N	120.6E
53	092038Z	15.2N 122.6E	LHDR	- CIRCULAR EYE 26 NM DIAM												15.2N	120.6E
54	092045Z	15.0N 122.6E	P 2	700 350 55 250 28 40 350 10 974 287 14 - ELIP SW-NE 40X20													8
55	092100Z	15.0N 122.6E	LHDR	- CIRCULAR EYE 25 NM DIAM, GOOD FIX												14.4N	122.6E
56	092100Z	15.2N 122.6E	LHDR	- ELLIPTICAL EYE 45X35 NM, 90 PERCENT WALL CLOUD												16.4N	120.6E
57	092135Z	15.5N 122.6E	LHDR	- CIRCULAR EYE 32 NM DIAM, 80 PERCENT WALL CLOUD												14.9N	122.6E
58	100000Z	15.6N 122.3E	LHDR	- CIRCULAR EYE 25 NM DIAM												14.4N	122.6E
59	100008Z	15.3N 122.3E	LHDR	- FAIR FIX, EYE NOT VISIBLE, 15 DEG SPIRAL OVERLAY												15.2N	120.6E
60	100017Z	15.5N 122.4E	SAT	(T4.5/4.5-/D0.5/21HRS)					PCN 1	DMSP							
61	100017Z	15.4N 122.5E	SAT	(T5.0/5.0-/D1.5/24HRS)					PCN 1	DMSP							
62	100017Z	15.4N 122.0E	SAT	(TIR DATA )					PCN 3	DMSP							
63	100030Z	15.3N 122.5E	LHDR	- FAIR FIX, EYE NOT VISIBLE 15 DEG SPIRAL OVERLAY												15.2N	120.6E
64	100108Z	15.9N 122.6E	LHDR	- CIRCULAR EYE 20 NM DIAM												15.2N	120.6E
65	100128Z	15.5N 122.7E	SAT	(T5.0/5.0-/W0.5/25HRS)					NOAA-2	(CONF 01)							
66	100130Z	15.4N 122.6E	LHDR	- CIRCULAR EYE 25 NM DIAM, 90 PERCENT WALL CLOUD												15.2N	120.6E
67	100235Z	15.6N 122.2E	P 2	5 700 70 68 320 50 5 10 20 974 287 14 - CIRC											20		8
68	100248Z	15.7N 121.6E	SAT	(T4.5/4.5-/D0.5/21HRS)					PCN 1	DMSP							
69	100248Z	15.8N 121.9E	SAT	(T5.0/5.0-/ / HRS)					PCN 1	DMSP							
70	100305Z	15.7N 121.8E	LHDR	- CIRCULAR EYE 30 NM DIAM, 90 PERCENT WALL CLOUD												15.2N	120.6E
71	100330Z	15.7N 121.8E	LHDR	- CIRCULAR EYE 30 NM DIAM, 90 PERCENT WALL CLOUD												15.2N	120.6E
72	100400Z	15.8N 121.9E	LHDR	- CIRCULAR EYE 20 NM DIAM, 100 PERCENT WALL CLOUD												16.0N	120.6E
73	100500Z	16.0N 121.8E	LHDR	- CIRCULAR EYE 26 NM DIAM, 100 PERCENT WALL CLOUD												16.4N	120.6E
74	100700Z	16.2N 120.8E	LHDR	- POSSIBLE EYE 15 DFG SPIRAL OVERLAY												16.6N	120.3E
75	100931Z	16.4N 120.4E	LHDR	- POOR FIX, POSSIBLE EYE, 15 DEG SPIRAL OVERLAY												15.2N	120.6E
76	101005Z	16.5N 120.3E	LHDR	- POOR FIX, POSSIBLF EYE, 15 DEG SPIRAL OVERLAY												15.2N	120.6E
77	101035Z	16.6N 120.1E	LHDR	- POOR FIX, POSSIBLF EYE, 15 DEG SPIRAL OVERLAY												15.2N	120.6E
78	101100Z	17.3N 119.9E	LHDR	- POOR FIX, POSSIBLF CENTER, 15 DEG SPIRAL OVERLAY												16.0N	120.3E
79	101200Z	17.0N 120.0E	LHDR	- 1035/												15.2N	120.6E
80	101259Z	16.8N 119.6E	SAT						PCN 3	DMSP							
81	101259Z	16.6N 119.2E	SAT						PCN 2	DMSP							
82	101529Z	17.4N 118.5E	SAT						PCN 3	DMSP							
83	101530Z	17.8N 119.0E	SAT						PCN 6	DMSP							9
84	102227Z	16.3N 118.0E	P 15	8 700 - - - -					50 20 90 986 297 13 - - - -								
85	102359Z	16.8N 116.8E	SAT	(T2.5/3.5-/M1.0/24HRS)					PCN 3	DMSP							
86	102359Z	16.7N 117.6E	SAT	(T4.0/4.0-/W1.0/24HRS)					PCN 3	DMSP							
87	102359Z	16.2N 117.6E	SAT	(T3.0/4.0-/W2.0/21HRS)					PCN 3	DMSP							
88	110335Z	16.5N 117.1E	P 10	5 700 - - - -					50 60 120 - 295 12 - - - -							9	
89	110409Z	16.8N 117.2E	SAT	(T4.0/4.0-/W1.0/24HRS)					PCN 3	DMSP							
90	110855Z	16.5N 116.7E	P 8	5 700 180 60 110 120 60 110 120 978 293 18 - - - -					PCN 4	DMSP						11	
91	111240Z	16.9N 116.1E	SAT						PCN 4	DMSP							
92	111240Z	16.7N 115.6E	SAT						PCN 4	DMSP							
93	111550Z	16.6N 115.0E	P 3	7 700 120 40 200 150 - - - -					290 13 - - - -							12	
95	111653Z	16.7N 115.3E	SAT						PCN 6	DMSP							
96	112050Z	17.0N 113.8E	P 10	30 500 170 80 90 100 60 90 80 978 - - - -					PCN 6	DMSP							
98	120122Z	17.1N 113.9E	SAT	(T4.0/4.0-/S /24HRS)					PCN 3	DMSP							
97	120142Z	17.7N 114.4E	SAT	(T4.5/4.5-/D0.5/24HRS)					PCN 1	DMSP							
98	120152Z	17.5N 115.5E	SAT	(T4.5/4.5-/W0.5/24HRS)					NOAA-2	(CONF 01)							
99	120352Z	17.5N 114.1E	SAT	(T4.0/4.0-/S /24HRS)					PCN 3	DMSP							
100	120415Z	16.5N 113.6E	P 5	7 700 80 80 70 40 15 70 40 - - - -					288 14 - - - -							13	
101	120430Z	16.6N 113.0E	P 5	3 700 - - - -					289 14 - - - -								
102	121632Z	19.6N 111.6E	SAT						PCN 4	DMSP							13
103	130104Z	20.0N 110.4E	SAT	(T4.0/4.0-/S /24HRS)					PCN 4	DMSP							
104	130106Z	20.2N 110.4E	SAT	(T4.0/4.0-/S /25HRS)					NUAA-2	(CONF 01)							
105	130334Z	20.1N 109.3E	SAT	(T4.0/4.0-/S /24HRS)					PCN 3	DMSP							
106	130334Z	19.9N 109.5E	SAT	(T3.5/3.5-/ / HRS)					PCN 3	DMSP							
107	131345Z	20.3N 108.1E	SAT						PCN 4	DMSP							
108	131615Z	20.8N 107.5E	SAT						PCN 3	DMSP							
109	140046Z	20.1N 105.3E	SAT	(TIR DATA )					PCN 5	DMSP							

TROPICAL STORM EMMA  
FIX POSITIONS FOR CYCLONE NO. 7  
0600Z 13 JUN TO 0600Z 18 JUN

FIX NO.	TIME	POSII	FIX CAT	ACCHY	FLT LVL	WTND DIR	SFC WIND VEL	BRG RNG	MIN SLP	MAX OBS	OBS	MIN T00MB	LVL	EYE MGT	FLT TI/TO FORM	PUSIT OF STATION	MSN NM8H
1	100107Z	2.0N 149.0E	SAT	(T1.0/1.0 /D1.0/21HRS)	PCN 5	UMSP											
2	101117Z	3.1N 147.4E	SAT		PCN 6	UMSP											
3	101318Z	3.8N 147.3E	SAT		PCN 5	UMSP											
4	102217Z	4.2N 147.0E	SAT	(T1.5/1.5 /D0.5/21HRS)	PCN 5	UMSP											
5	110230Z	5.4N 144.0E	SAT	(T1.5/1.5 /D0.5/21HRS)	PCN 5	UMSP											
6	111059Z	6.3N 143.2E	SAT		PCN 5	UMSP											
7	112434Z	8.0N 142.0E	SAT	(T1.5/1.5 /S /25HRS)	PCN 5	UMSP											
8	120211Z	8.5N 141.7E	SAT	(T1.5/1.5 /S /25HRS)	PCN 3	UMSP											
9	121452Z	10.8N 137.9E	SAT		PCN 5	UMSP											
10	122313Z	12.0N 136.8E	SAT	(T2.5/2.5 /D0.5/25HRS)	NOAA-2	(CONF 01)											
11	122322Z	11.4N 136.3E	SAT	(T2.5/2.5 /D1.0/24HRS)	PCN 5	UMSP											
12	122322Z	12.4N 136.4E	SAT	(T3.0/3.0 / / HRS)	PCN 3	UMSP											
13	130143Z	11.2N 135.7E	P 10	2 1500 140 27 50	13	30 50	1001	-	26 25	-	-	-					1
14	130152Z	12.3N 135.6E	SAT	(T2.5/2.5 /D1.0/24HRS)	PCN 5	UMSP											
15	130152Z	12.4N 134.9E	SAT	(T3.0/3.0 / / HRS)	PCN 5	UMSP											
16	130248Z	11.4N 135.9E	P 10	2 1500 110 30 360	38	30 360	38	1001	-	27 25	-	-	-				1
17	131244Z	13.4N 132.4E	SAT		PCN 6	UMSP											
18	131434Z	13.6N 131.0E	SAT		PCN 5	UMSP											
19	131434Z	13.3N 132.1E	SAT		PCN 5	UMSP											
20	131552Z	12.3N 132.2E	P -	700 - - -													3
21	132130Z	13.0N 131.6E	P 10	10 700 10 35 310	40	25 300	25	998	310 15 9	-	-	-					3
22	132304Z	13.0N 130.0E	SAT	(T3.0/3.0 /D0.5/24HRS)	PCN 3	UMSP											
23	132304Z	13.5N 130.4E	SAT	(T3.0/3.0 /S /24HRS)	PCN 3	UMSP											
24	140315Z	14.4N 129.5E	SAT	(T3.0/3.0 /D0.5/24HRS)	PCN 3	UMSP											
25	140444Z	14.3N 130.0E	P 10	5 1500 180 30 90	15	40 350	10	1001	-	-	-	-					4
26	140830Z	14.7N 129.3E	P 5	5 700 70 45 300	50	25 90	20	998	308	-	-	-					4
27	141145Z	15.2N 127.7E	SAT		PCN 5	UMSP											
28	141145Z	15.2N 127.1E	SAT		PCN 5	UMSP											
29	141540Z	15.2N 128.0E	P 8	8 700 30 45 330	40	-	-	998	307 12	-	-	-					5
30	141557Z	15.3N 127.1E	SAT		PCN 5	UMSP											
31	142336Z	15.6N 127.6E	SAT		PCN 3	UMSP											
32	142050Z	15.6N 127.6E	P 1	2 700 20 45 300	30	4 270	20	994	305 15	-	-	-					5
33	142336Z	16.0N 126.6E	SAT	(T3.5/3.5 /S /24HRS)	NOAA-2	(CONF 01)											
34	150027Z	15.9N 126.6E	SAT	(T3.5/3.5 /D0.5/25HRS)	PCN 3	UMSP											
35	150257Z	16.0N 125.8E	SAT	(T3.5/3.5 /D0.5/25HRS)	PCN 3	UMSP											
36	150257Z	16.0N 126.1E	SAT	(T3.5/3.5 /D0.5/25HRS)	PCN 3	UMSP											
37	150852Z	16.8N 125.5E	P 5	5 700 20 70 270	15	5 230	10	990	304 15 13	CIRC	15						6
38	151309Z	16.0N 124.7E	SAT	(IM DATA)	PCN 5	UMSP											
39	151535Z	17.1N 124.5E	P 5	10 700 200 80 110	20	-	-	995	305 12	-	-	-					6
40	151538Z	16.6N 125.0E	SAT		PCN 5	UMSP											
41	151538Z	16.2N 124.4E	SAT		PCN 5	UMSP											
42	152117Z	17.6N 124.5E	P 5	5 700 30 35 130	20	55 90	20	994	305 14	-	-	-					7
43	160009Z	17.8N 124.5E	SAT	(T3.5/3.5 /S /24HRS)	PCN 3	UMSP											
44	160009Z	18.1N 124.4E	SAT	(T3.0/4.0+ /W1.0/24HRS)	PCN 3	UMSP											
45	160009Z	17.6N 124.1E	SAT	(T3.5/3.5 /S /22HRS)	PCN 5	UMSP											
46	160230Z	18.0N 124.2E	P 10	5 700 30 40 10	50	4 330	20	995	305 14	-	-	-					7
47	160238Z	17.8N 124.2E	SAT	(T3.5/3.5 /S /24HRS)	PCN 3	UMSP											
48	160238Z	17.9N 124.2E	SAT	(T3.5/3.5 /S /22HRS)	PCN 5	UMSP											
49	160852Z	18.0N 123.7E	P 3	2 700 60 40 40	20	50 90	30	988	299 17	-	-	-					8
50	161250Z	18.6N 124.4E	SAT		PCN 3	UMSP											
51	161250Z	18.0N 124.2E	SAT		PCN 5	UMSP											
52	161445Z	19.2N 123.5E	P 5	15 700 280 55 180	30	5 10	70	995	304 14	-	-	-					8
53	161920Z	18.8N 123.8E	SAT		PCN 5	UMSP											
54	161920Z	17.6N 123.9E	SAT		PCN 5	UMSP											
55	162351Z	19.9N 124.2E	SAT	(T3.5/3.5 /S /24HRS)	PCN 3	UMSP											
56	162351Z	19.8N 124.1E	SAT	(T4.0/4.0 /D0.5/24HRS)	PCN 3	UMSP											
57	162359Z	19.0N 125.0E	SAT	(T3.5/3.5 /S /23HRS)	NOAA-2	(CONF 01)											
58	170220Z	20.4N 124.7E	SAT	(T3.5/3.5 /S /24HRS)	PCN 3	UMSP											
59	170220Z	20.2N 124.8E	SAT	(T2.5/3.0 /W0.5/26HRS)	PCN 3	UMSP											
60	170220Z	20.4N 124.6E	SAT	(T4.0/4.0 /W0.5/24HRS)	PCN 4	UMSP											
61	170230Z	21.0N 123.8E	P 10	5 700 130 50 50	40	50 00	60	-	-	10 14	-	-	-				9
62	170830Z	21.4N 125.3E	P 13	7 700 190 50 110	40	40 150	60	-	-	18 13	-	-	-				9
63	171232Z	21.9N 125.8E	SAT		PCN 5	UMSP											
64	171232Z	21.8N 125.9E	SAT		PCN 5	UMSP											
65	171901Z	22.5N 126.2E	SAT		PCN 5	UMSP											
66	171901Z	22.6N 126.7E	SAT		PCN 5	UMSP											
67	171901Z	22.7N 126.6E	SAT		PCN 5	UMSP											
68	172332Z	26.0N 128.6E	SAT	(T2.0/3.0 /W1.5/24HRS)	PCN 3	UMSP											
69	172332Z	26.0N 128.6E	SAT	(T2.0/3.0 /W2.0/24HRS)	PCN 3	UMSP											
70	180201Z	26.4N 129.1E	SAT	(T2.0/3.0 /W1.5/24HRS)	PCN 3	UMSP											
71	180201Z	26.6N 129.0E	SAT	(T2.0/2.5 /W0.5/24HRS)	PCN 3	UMSP											
72	180201Z	26.4N 128.9E	SAT	(T2.0/3.0 /W2.0/24HRS)	PCN 3	UMSP											
73	181214Z	29.0N 131.3E	SAT		PCN 5	UMSP											
74	181214Z	31.0N 134.1E	SAT		PCN 5	UMSP											
75	181443Z	30.0N 132.3E	SAT		PCN 6	UMSP											
76	190019Z	33.0N 139.5E	SAT	(T1.5/2.0 /W0.5/25HRS)	NOAA-2	(CONF 02)											

TROPICAL STORM FREDA  
FIX POSITIONS FOR CYCLONE NO. 8  
0000Z 21 JUN TO 1200Z 22 JUN

FIX NO.	TIME	POSIT	FIX CAT	ACCHY	NAV-MET	MAX OBS LVL	MAX OBS DIR	MAX OBS VEL	SFC WIND BRG	OBS MIN	MIN 700MB	FLT LVL	EYE	ORIEN-	EYE FORM	POSIT TATION	OF DIA	MSN
						LVL	DIR	VEL	RNG	SLP	HGT	TI/TO					HADAR	NMBR
1	162209Z	18.0N 146.9E	SAT	(T1.0/1.0 /0	/24HRS)	PCN 5	DNSP											
2	162209Z	17.8N 146.9E	SAT	(T1.0/1.0 /	/ HRS)	PCN 3	DNSP											
3	170220Z	18.3N 146.2E	SAT	(T1.0/1.0 /0	/24HRS)	PCN 5	DNSP											
4	170220Z	17.7N 147.4E	SAT	(T1.0/1.0 /	/ HRS)	PCN 6	DNSP											
5	172332Z	18.5N 143.3E	SAT	(T1.5/1.5 /00.5/24HRS)		PCN 5	DNSP											
6	172332Z	18.8N 143.3E	SAT	(T1.5/1.5 /00.5/24HRS)		PCN 5	DNSP											
7	180201Z	19.5N 142.4E	SAT	(T1.5/1.5 /00.5/24HRS)		PCN 5	DNSP											
8	180201Z	19.3N 141.6E	SAT	(T1.5/1.5 /00.5/25HRS)		PCN 3	DNSP											
9	181443Z	19.7N 142.2E	SAT	(IR DATA )	)	PCN 5	DNSP											
10	182314Z	21.4N 142.7E	SAT	(IR DATA )	)	PCN 5	DNSP											
11	190142Z	21.7N 142.0E	SAT	(IR DATA )	)	PCN 5	DNSP											
12	191156Z	22.3N 142.4E	SAT	(IR DATA )	)	PCN 4	DNSP											
13	192256Z	25.2N 144.9E	SAT	(IR DATA )	)	PCN 5	DNSP											
14	200124Z	25.5N 145.5E	SAT	(IR DATA )	)	PCN 3	DNSP											
15	201137Z	25.8N 148.5E	SAT	(IR DATA )	)	PCN 3	DNSP											
16	202238Z	26.0N 151.3E	SAT	(T2.5/2.5 /	/ HRS)	PCN 3	DNSP											
17	210105Z	26.2N 151.9E	SAT	(T2.5/2.5 /	/ HRS)	PCN 3	DNSP											
18	210105Z	26.0N 151.9E	SAT	(T2.0/2.0 /	/ HRS)	PCN 4	DNSP											
19	210516Z	25.7N 152.8E	P	5 3 700 220 55 -	-	5 220	25 989	301 15 -	CIR	5		1						
20	211119Z	24.9N 154.9E	SAT	(IR DATA )	)	PCN 5	DNSP											
21	211119Z	24.9N 155.0E	SAT	(IR DATA )	)	PCN 4	DNSP											
22	211347Z	25.0N 155.6E	SAT	(IR DATA )	)	PCN 6	DNSP											
23	211347Z	24.9N 154.8E	SAT	(IR DATA )	)	PCN 3	DNSP											
24	212220Z	25.3N 158.1E	SAT	(T2.0/2.5 /00.5/24HRS)		PCN 4	DNSP											
25	212220Z	24.9N 158.5E	SAT	(T1.5/2.0 /00.5/20HRS)		PCN 4	DNSP											
26	220404Z	25.3N 159.1E	SAT	(T2.0/2.5 /00.5/24HRS)		PCN 3	DNSP											
27	220404Z	25.1N 159.2E	SAT	(T1.5/2.0 /00.5/20HRS)		PCN 4	DNSP											
28	230028Z	30.2N 172.8E	SAT	(IR DATA )	)	PCN 3	DNSP											

TYPHOON GILDA  
FIX POSITIONS FOR CYCLONE NO. 9  
0600Z 30 JUN TO 0000Z 07 JUL

FIX NO.	TIME	POSIT	FIX CAT	ACCHY	NAV-MET	MAX OBS LVL	MAX OBS DIR	MAX OBS VEL	SFC WIND BRG	OBS MIN	MIN 700MB	FLT LVL	EYE	ORIEN-	EYE FORM	POSIT TATION	OF DIA	MSN
						LVL	DIR	VEL	RNG	SLP	HGT	TI/TO					HADAR	NMBR
1	251006Z	17.3N 160.0E	SAT	(IR DATA )	)	PCN 6	DNSP											
2	260114Z	17.8N 156.2E	SAT	(IR DATA )	)	PCN 5	DNSP											
3	260404Z	18.0N 154.5E	SAT	(IR DATA )	)	PCN 6	DNSP											
4	261356Z	18.0N 154.1E	SAT	(IR DATA )	)	PCN 5	DNSP											
5	262230Z	18.0N 151.8E	SAT	(T1.0/1.0 /	/ HRS)	PCN 5	DNSP											
6	262230Z	18.0N 151.8E	SAT	(T1.5/1.5 /	/ HRS)	PCN 5	DNSP											
7	270055Z	18.1N 151.0E	SAT	(IR DATA )	)	PCN 5	DNSP											
8	270055Z	18.0N 150.9E	SAT	(IR DATA )	)	PCN 6	DNSP											
9	271500Z	18.5N 145.0E	SAT	(IR DATA )	)	PCN 6	DNSP											
10	272112Z	18.1N 146.6E	SAT	(T1.5/1.5 /00.5/24HRS)		PCN 4	DNSP											
11	280218Z	18.1N 147.9E	SAT	(IR DATA )	)	PCN 4	DNSP											
12	281053Z	17.5N 146.8E	SAT	(IR DATA )	)	PCN 6	DNSP											
13	281500Z	17.7N 145.0E	SAT	(IR DATA )	)	PCN 5	DNSP											
14	282153Z	17.8N 143.4E	SAT	(T2.0/2.0 /00.5/24HRS)		PCN 6	DNSP											
15	282235Z	18.0N 143.0E	SAT	(T1.5/1.5 /00.5/24HRS)		NOAA-2												
16	282335Z	18.7N 143.1E	SAT	(IR DATA )	)	PCN 5	DNSP											
17	290200Z	18.8N 141.6E	SAT	(IR DATA )	)	PCN 4	DNSP											
18	290200Z	18.5N 141.6E	SAT	(T1.5/1.5 /	/ HRS)	PCN 5	DNSP											
19	290300Z	17.8N 141.6E	P	2 3 700 - - -	- - -	- - -	- - -	- - -	1009	311 9 - - -							1	
20	291216Z	18.2N 140.0E	SAT	(IR DATA )	)	PCN 5	DNSP											
21	291216Z	19.3N 139.2E	SAT	(IR DATA )	)	PCN 6	DNSP											
22	291442Z	19.7N 139.7E	SAT	(IR DATA )	)	PCN 5	DNSP											
23	291442Z	19.5N 139.7E	SAT	(IR DATA )	)	PCN 6	DNSP											
24	292316Z	21.0N 136.7E	SAT	(IR DATA )	)	PCN 3	DNSP											
25	292316Z	19.4N 135.4E	SAT	(T1.5/1.5 /S	/21HRS)	PCN 5	DNSP											
26	292345Z	21.5N 136.5E	SAT	(T2.5/2.5 /D1.0/25HRS)		NOAA-2												
27	300141Z	20.8N 135.8E	SAT	(IR DATA )	)	PCN 3	DNSP											
28	300141Z	20.4N 135.7E	SAT	(IR DATA )	)	PCN 5	DNSP											
29	301158Z	20.3N 134.9E	SAT	(IR DATA )	)	PCN 3	DNSP											
30	301312Z	19.5N 135.0E	P	5 3 700 80 30 360	25 - - -	990	301 17 11 - - -									3		
31	301423Z	20.2N 134.7E	SAT	(IR DATA )	)	PCN 3	DNSP											
32	301423Z	20.6N 135.5E	SAT	(IR DATA )	)	PCN 4	DNSP											
33	302150Z	19.8N 134.3E	P	3 2 700 150 30 70	100 25 70 100	990	301 14 11 - - -									4		
34	302258Z	20.0N 134.0E	SAT	(T4.0/4.0 /D2.0/24HRS)		PCN 3	DNSP											
35	302258Z	19.7N 134.0E	SAT	(T3.0/3.0 /D1.5/24HRS)		PCN 3	DNSP											
36	302259Z	20.0N 135.0E	SAT	(T4.5/3.5 /D1.0/24HRS)		NOAA-2												
37	302352Z	19.4N 134.1E	P	5 2 700 340 40 270	60 30 270	60 983	296 14 11 - - -									4		
38	303042Z	19.2N 134.0E	SAT	(IR DATA )	)	PCN 3	DNSP											
39	011140Z	19.4N 133.9E	SAT	(IR DATA )	)	PCN 4	DNSP											
40	011140Z	19.6N 133.3E	SAT	(IR DATA )	)	PCN 4	DNSP											
41	011237Z	18.5N 133.5E	SAT	(IR DATA )	)	NOAA-2												
42	011546Z	19.6N 133.4E	SAT	(IR DATA )	)	PCN 5	DNSP											
43	011546Z	19.4N 133.6E	SAT	(IR DATA )	)	PCN 4	DNSP											
44	012240Z	19.7N 132.3E	SAT	(IR DATA )	)	PCN 3	DNSP											
45	012240Z	19.4N 132.4E	SAT	(T4.0/4.0 /D1.0/24HRS)		PCN 4	DNSP											
46	020020Z	19.4N 132.3E	P	5 2 700 180 70 90	70 100 90	70 971	287 17 12 CIR	50								6		
47	020021Z	19.9N 132.4E	SAT	(IR DATA )	)	PCN 3	DNSP											
48	020021Z	20.0N 132.2E	SAT	(IR DATA )	)	PCN 3	DNSP											
49	020051Z	20.0N 132.5E	SAT	(T5.0/5.0 /D1.0/26HRS)		NOAA-2												
50	020246Z	19.8N 132.0E	SAT	(T4.5/4.5 /D0.5/24HRS)		PCN 1	DNSP											
51	020320Z	19.7N 132.0E	P	5 1 700 190 65 110	40 70 130	75 967	282 18 14 CIR	30								6		
52	021121Z	20.2N 130.7E	SAT	(IR DATA )	)	PCN 4	DNSP											
53	021121Z	20.1N 131.5E	SAT	(IR DATA )	)	PCN 6	DNSP											
54	021217Z	20.0N 130.8E	P	10 5 700 180 75 60	35 - - -	961	277 18 14 CIR	30								7		
55	021303Z	20.4N 130.8E	SAT	(IR DATA )	)	PCN 2	DNSP											
56	021527Z	20.6N 130.6E	SAT	(IR DATA )	)	PCN 1	DNSP											
57	021528Z	20.9N 130.6E	SAT	(IR DATA )	)	PCN 2	DNSP											
58	021546Z	20.1N 130.7E	P	20 2 700 190 75 110	35 - - -	961	277 17 14 ETP	N-S	25x20							8		
59	022137Z	21.0N 129.8E	P	2 3 700 180 70 70	22 80 110	12 963	278 19 13 CIR	20										
60	022351Z	21.5N 128.8E	SAT	(T5.5/5.5 /D0.5/23HRS)		NOAA-2												
61	030003Z	21.2N 129.9E	SAT	(T5.5/5.5 /D1.0/24HRS)		PCN 1	DNSP											

TYPHOON GILDA  
FIX POSITIONS FOR CYCLONE NO. 9  
0600Z 30 JUN TO 0000Z 07 JUL

FIX NO.	TIME	POSIT	FIX	ACCHY	FIX	MAX OBS	MAX OBS	OBS	MIN	FLT	PUSIT OF RADAR	MSN				
			CAT	NAV-MET	LVL	DIR VEL	SFC WIND	MIN	FOOMB	LV		NMBH				
						BKG RNG	VEL BKG RNG	SLP	MGT	TI/TO	EYE	ORIEN-	EYE			
62	030003Z	21,0N 129.8E	SAT	(15.0/5.0 /D1.0/25MRS)		PCN 3	DMSP									
63	030227Z	21,5N 129.2E	SAT	(IR DATA		)	PCN 1	DMSP								
64	030227Z	21,6N 129.3E	SAT	(IR DATA		)	PCN 1	DMSP								
65	030232Z	21,5N 129.3E	P	2	3	700	360	70	290	60	-	16				
66	030935Z	22,7N 128.4E	P	5	5	700	130	65	50	30	70	16	9			
67	031232Z	22,0N 128.5E	SAT	(IR DATA		)	NOAA-2	(CONF 01)								
68	031245Z	22,8N 128.4E	SAT	(IR DATA		)	PCN 1	DMSP								
69	031245Z	23,2N 128.3E	SAT	(IR DATA		)	PCN 2	DMSP								
70	031245Z	22,6N 128.3E	SAT	(IR DATA		)	PCN 1	DMSP								
71	031430Z	23,2N 127.9E	P	5	5	700	260	50	200	20	-	-	9			
72	031509Z	23,3N 127.8E	SAT	(IR DATA		)	PCN 1	DMSP								
73	031509Z	23,6N 127.9E	SAT	(IR DATA		)	PCN 2	DMSP								
74	031700Z	23,6N 127.8E	LRDR	-	45/3											
75	031800Z	23,7N 127.7E	LRDR	-	4//3											
76	031815Z	23,8N 127.6E	LRDR	-	15 DEG SPIRAL OVERLAY											
77	031843Z	23,8N 127.2E	LRDR	-	15 DEG SPIRAL OVERLAY											
78	031900Z	23,8N 127.6E	LRDR	-	5592											
79	031945Z	23,9N 127.5E	LRDR	-	GOOD FIX											
80	032000Z	23,9N 127.5E	LRDR	-	41712											
81	032115Z	24,0N 127.5E	P	5	2	700	290	85	180	30	-	-	10			
82	032240Z	24,2N 127.3E	LRDR	-	GOOD FIX											
83	032300Z	24,5N 127.3E	LRDR	-	55/42											
84	032300Z	24,3N 127.3E	LRDR	-	10612											
85	032300Z	24,4N 127.3E	LRDR	-	12773											
86	032300Z	24,3N 127.3E	LRDR	-	GOOD FIX											
87	032320Z	24,3N 127.2E	LRDR	-	GOOD FIX, 15 DEG SPIRAL OVERLAY											
88	032330Z	24,4N 127.3E	LRDR	-	GOOD FIX											
89	032345Z	24,4N 127.1E	SAT	(15.5/5.5 /S /24MRS)		PCN 1	DMSP									
90	032345Z	24,4N 127.2E	SAT	(T6.0/6.0 /D1.0/24MRS)		PCN 1	DMSP									
91	032345Z	24,4N 127.1E	LRDR	-	GOOD FIX, 15 DEG SPIRAL OVERLAY, 20 PERCENT WALL CLOUD											
92	040005Z	24,3N 127.4E	LRDR	-	GOOD FIX, CIRCULAR EYE 15 NM DIAM, 50 PERCENT WALL CLOUD											
93	040015Z	24,5N 127.2E	LRDR	-	GOOD FIX											
94	040030Z	24,5N 127.1E	LRDR	-	GOOD FIX											
95	040040Z	24,2N 127.6E	LRDR	-												
96	040045Z	24,7N 127.1E	LRDR	-	GOOD FIX, CIRCULAR EYE 15 NM DIAM, 50 PERCENT WALL CLOUD											
97	040100Z	24,7N 127.1E	LRDR	-	55112											
98	040100Z	24,8N 127.1E	LRDR	-	10673											
99	040115Z	24,7N 126.9E	LRDR	-	CIRCULAR EYE 12 NM DIAM, 60 PERCENT WALL CLOUD											
100	040145Z	24,8N 126.8E	LRDR	-	GOOD FIX, CIRCULAR EYE 12 NM DIAM, 50 PERCENT WALL CLOUD											
101	040200Z	24,8N 126.9E	LRDR	-	12673											
102	040200Z	24,8N 126.9E	LRDR	-	10512											
103	040209Z	24,9N 126.8E	SAT	(IR DATA		)	PCN 1	DMSP								
104	040209Z	25,0N 126.4E	SAT	(IR DATA		)	PCN 1	DMSP								
105	040215Z	24,7N 126.7E	LRDR	-	FAIR FIX, CIRCULAR EYE 12 NM DIAM, 40 PERCENT WALL CLOUD											
106	040230Z	24,8N 126.8E	LRDR	-	GOOD FIX											
107	040245Z	24,8N 126.7E	LRDR	-	CIRCULAR EYE 12 NM DIAM, 60 PERCENT WALL CLOUD											
108	040300Z	24,8N 127.0E	P	5	2	700	230	85	100	.35	5	150	20	15	CIRC	
109	040300Z	24,9N 126.7E	LRDR	-	12673											
110	040300Z	24,9N 126.7E	LRDR	-	4//3											
111	040315Z	24,8N 126.6E	LRDR	-	GOOD FIX, CIRCULAR EYE 15 NM DIAM, 70 PERCENT WALL CLOUD											
112	040330Z	24,8N 126.7E	LRDR	-	GOOD FIX											
113	040345Z	24,8N 126.6E	LRDR	-	GOOD FIX, CIRCULAR EYE 15 NM DIAM, 60 PERCENT WALL CLOUD											
114	040350Z	24,7N 126.4E	SAT	(15.5/5.5 / / MRS)		PCN 1	DMSP									
115	040400Z	24,8N 126.6E	LRDR	-	10412											
116	040400Z	24,8N 126.7E	LRDR	-	55//3											
117	040400Z	24,9N 126.7E	LRDR	-	12623											
118	040415Z	24,9N 126.6E	LRDR	-	GOOD FIX, CIRCULAR EYE 12 NM DIAM, 75 PERCENT WALL CLOUD											
119	040430Z	24,9N 126.6E	LRDR	-	GOOD FIX											
120	040445Z	24,9N 126.6E	LRDR	-	GOOD FIX, CIRCULAR EYE 12 NM DIAM, 75 PERCENT WALL CLOUD											
121	040500Z	24,9N 126.8E	LRDR	-	12613											
122	040500Z	24,9N 126.7E	LRDR	-	10412											
123	040500Z	24,9N 126.7E	LRDR	-	55//3											
124	040515Z	24,9N 126.6E	LRDR	-	GOOD FIX, CIRCULAR EYE 12 NM DIAM, 70 PERCENT WALL CLOUD											
125	040545Z	24,9N 126.6E	LRDR	-	GOOD FIX, CIRCULAR EYE 12 NM DIAM, 60 PERCENT WALL CLOUD											
126	040600Z	25,1N 126.8E	LRDR	-	12633											
127	040600Z	25,0N 126.8E	LRDR	-	5//3											
128	040615Z	24,9N 126.8E	LRDR	-	FAIR FIX, CIRCULAR EYE 10 NM DIAM, 50 PERCENT WALL CLOUD											
129	040630Z	25,0N 126.8E	LRDR	-	GOOD FIX											
130	040645Z	25,1N 126.8E	LRDR	-	FAIR FIX, CIRCULAR EYE 10 NM DIAM, 50 PERCENT WALL CLOUD											
131	040700Z	25,1N 126.9E	LRDR	-	12613											
132	040700Z	25,1N 126.8E	LRDR	-	10532											
133	040700Z	25,1N 126.8E	LRDR	-	55//3											
134	040730Z	25,2N 126.7E	LRDR	-	GOOD FIX											
135	040745Z	25,3N 127.0E	LRDR	-	GOOD FIX, CIRCULAR EYE 10 NM DIAM, 70 PERCENT WALL CLOUD											
136	040800Z	25,2N 126.9E	LRDR	-	5//3											
137	040800Z	25,3N 126.9E	LRDR	-	11633											
138	040830Z	25,3N 126.8E	LRDR	-	GOOD FIX											
139	040845Z	25,3N 126.8E	LRDR	-	GOOD FIX, CIRCULAR EYE 10 NM DIAM, 60 PERCENT WALL CLOUD											
140	040930Z	25,3N 126.8E	LRDR	-	GOOD FIX											
141	040945Z	25,7N 126.8E	LRDR	-	GOOD FIX, CIRCULAR EYE 10 NM DIAM, 50 PERCENT WALL CLOUD											
142	041000Z	25,7N 126.7E	LRDR	-	12733											
143	041000Z	25,8N 126.8E	LRDR	-	10482											
144	041030Z	25,8N 126.6E	LRDR	-	GOOD FIX											
145	041100Z	25,8N 126.5E	LRDR	-	12523											
146	041110Z	25,9N 126.4E	LRDR	-	GOOD FIX, CIRCULAR EYE 25 NM DIAM, 60 PERCENT WALL CLOUD											
147	041145Z	25,9N 126.3E	LRDR	P	3	2	700	240	65	130	10	-	-	945	262	17 15 CIRC
148	041155Z	25,9N 126.3E	SAT	(IR DATA		)	NON	DMSP								
149	041157Z	25,8N 126.5E	SAT	-	10482											
150	041200Z	25,8N 126.4E	LRDR	-	12513											
151	041200Z	25,8N 126.4E	LRDR	-	GOOD FIX, CIRCULAR EYE 12 NM DIAM, 80 PERCENT WALL CLOUD											
152	041213Z	25,8N 126.3E	LRDR	-	GOOD FIX, CIRCULAR EYE 12 NM DIAM, 90 PERCENT WALL CLOUD											
153	041226Z	25,7N 126.4E	SAT	(IR DATA		)	PCN 1	DMSP								
154	041226Z	26,0N 126.3E	SAT	(IR DATA		)	PCN 2	DMSP								
155	041238Z	25,8N 126.3E	LRDR	-	GOOD FIX, CIRCULAR EYE 12 NM DIAM, 90 PERCENT WALL CLOUD											
156	041300Z	25,7N 126.4E	LRDR	-	12513											
157	041300Z	25,8N 126.3E	LRDR	-	105//											
158	041400Z	25,9N 126.5E	LRDR	-	12633											
159	041400Z	25,8N 126.5E	LRDR	-	10612											
160	041430Z	25,9N 126.5E	LRDR	-	GOOD FIX											

TYPHOON GILDA  
FIX POSITIONS FOR CYCLONE NO. 9  
0600Z 30 JUN TO 0000Z 07 JUL

FIX NO.	TIME	POSIT	MAX OBS CAT NAV-MET	MAX OBS FLT LVL WTND	SFC WIND	MIN DIR VEL BRG RNG	MIN VEL BRG RNG	100MB	LVL	EYE	ORIEN-	EYE	POSI	BF	MSN	
161	0414314	25.9N 126.6E	P 6 1	700 70 68 330 10	-	-	-	944	263	18 16	CIRC	IS	26.4N	127+0E	11	
162	0414484	25.9N 126.5E	LDRK	- GU00 FIX, CIRCULAR EYE 28 NM DIAM, 50 PERCENT WALL CLOUD	(IM DATA )	PCN 1 DMSP										
163	041502	25.9N 126.6E	SAT	(IM DATA )												
164	041502	25.9N 126.5E	LDRK	- 1142												
165	0415484	26.3N 126.6E	LDRK	- FAIR FIX, 10 UEG SPIRAL OVERLAY, 40 PERCENT WALL CLOUD												
166	0416004	26.4N 126.6E	LDRK	- 12023												
167	0416004	26.3N 126.5E	LDRK	- 12732												
168	0416304	26.4N 126.6E	LDRK	- GOOD FIX												
169	0416324	26.2N 126.5E	SAT	(IM DATA )	PCN 3 DMSP											
170	0416402	26.6N 126.5E	LDRK	- FAIR FIX, CIRCULAR EYE 18 NM DIAM, 50 PERCENT WALL CLOUD												
171	0417002	26.6N 126.4E	LDRK	- 12432												
172	0417302	26.7N 126.2E	LDRK	- GOOD FIX												
173	0418002	26.8N 126.1E	LDRK	- 21642												
174	0418002	26.8N 126.3E	LDRK	- 22753												
175	0418152	26.8N 126.2E	LDRK	- FAIR FIX, 10 UEG SPIRAL OVERLAY, 40 PERCENT WALL CLOUD												
176	0418302	26.8N 126.0E	LDRK	- GOOD FIX												
177	0419002	26.9N 126.1E	LDRK	- 21//2												
178	0419002	26.9N 126.0E	LDRK	- 51742												
179	0419132	26.8N 126.3E	LDRK	- POOR FIX, EXTRAP EYE, 20 PERCENT WALL CLOUD												
180	0419152	26.8N 126.3E	LDRK	- FAIR FIX, 10 UEG SPIRAL OVERLAY, 30 PERCENT WALL CLOUD												
181	0419302	26.8N 125.8E	LDRK	- GOOD FIX												
182	0419322	26.8N 126.3E	LDRK	- FAIR FIX, 10 UEG SPIRAL OVERLAY, 30 PERCENT WALL CLOUD												
183	0419332	26.8N 126.3E	LDRK	- POOR FIX												
184	0420002	26.8N 126.0E	LDRK	- 2///2												
185	0420302	26.7N 126.2E	LDRK	- GOOD FIX												
186	0421002	26.7N 126.1E	LDRK	- 21612												
187	0421002	26.7N 126.3E	LDRK	- 3///3												
188	0421152	26.8N 126.3E	LDRK	- GOOD FIX, 50 PERCENT WALL CLOUD												
189	0421402	26.8N 126.3E	LDRK	- GOOD FIX, 60 PERCENT WALL CLOUD												
190	0422002	26.8N 126.3E	LDRK	- 20512												
191	0422152	26.9N 126.3E	LDRK	- FAIR FIX, UNIFORM EYE, 35 PERCENT WALL CLOUD												
192	0422472	26.9N 126.3E	LDRK	- FAIR FIX, 30 PERCENT WALL CLOUD												
193	0423002	27.1N 126.3E	LDRK	- FAIR FIX, 30 PERCENT WALL CLOUD												
194	0423004	27.1N 126.4E	LDRK	- GOOD FIX												
195	0423152	27.1N 126.3E	LDRK	- FAIR FIX, 30 PERCENT WALL CLOUD												
196	0423272	27.1N 126.3E	SAT	(13.5/4.5 /W2.0/24HRS)	PCN 3 DMSP											
197	0423272	27.1N 126.0E	SAT	(13.0/6.0 /W1.0/24HRS)	PCN 3 DMSP											
198	0423302	27.0N 126.3E	LDRK	- GOOD FIX												
199	0423432	27.0N 126.3E	SAT	(16.5/6.5 /W2.0/24HRS)	NOAA-2 (CONF 01)											
200	0423452	27.0N 126.3E	LDRK	- FAIR FIX, 30 PERCENT WALL CLOUD												
201	0500122	27.4N 126.3E	LDRK	- FAIR FIX, 10 UEG SPIRAL OVERLAY, 30 PERCENT WALL CLOUD												
202	0500124	27.5N 126.3E	LDRK	- GOOD FIX												
203	0501302	27.6N 126.3E	LDRK	- GOOD FIX												
204	0502002	27.6N 125.8E	LDRK	- 6///3												
205	0502302	27.8N 126.3E	LDRK	- GOOD FIX												
206	0502452	27.8N 126.5E	LDRK	- POOR FIX												
207	0503322	27.8N 126.7E	SAT	(IM DATA )	PCN 3 DMSP											
208	0503322	27.8N 126.9E	SAT	(14.0/5.0 /W1.5/24HRS)	PCN 3 DMSP											
209	0504002	28.0N 126.1E	P 5	5 700 170 70 60 35 50 60 60 458 273 18 15 CIRC												
210	0504002	28.0N 125.8E	LDRK	- 6///3												
211	0504042	28.0N 126.0E	P 5	5 700 220 80 160 100 75 280 90 955 271 17 15 CIRC												
212	0512082	29.2N 126.3E	SAT	(IM DATA )	PCN 3 DMSP											
213	0512082	29.2N 126.2E	SAT	(IM DATA )	PCN 4 DMSP											
214	0516132	30.2N 127.1E	SAT	(IM DATA )	PCN 4 DMSP											
215	0521102	30.7N 126.8E	LDRK	- 0///												
216	0521422	31.2N 126.4E	P 8	4 700 160 82 90 106 50 90 106 962 275 17 13 - - -												
217	0522002	31.3N 126.7E	LDRK	- 0///3												
218	0523082	31.3N 126.9E	SAT	(13.0/4.0 /W2.0/24HRS)	PCN 3 DMSP											
219	0600002	31.6N 127.0E	LDRK	- 6///2												
220	0600372	32.0N 129.6E	SAT	(14.5/4.5 /W2.0/25HRS)	NOAA-2											
221	0601002	31.8N 127.1E	LDRK	- 5///3												
222	0601002	31.8N 127.2E	LDRK	- 6///2												
223	0602004	32.0N 127.1E	LDRK	- 5///2												
224	0603002	32.2N 127.2E	LDRK	- 5///2												
225	0603132	32.3N 127.3E	SAT	(IM DATA )	PCN 3 DMSP											
226	0603232	32.3N 127.3E	P 10	3 700 130 70 30 70 55 170 140 464 277 19 12 - - -												
227	0604002	32.3N 127.3E	LDRK	- 5///2												
228	0604042	32.4N 127.4E	LDRK	- 6///												
229	0604152	32.1N 127.5E	LDRK	- CIRCULAR EYE OPEN TO SE, 30 PERCENT WALL CLOUD												
230	0605002	32.4N 127.3E	LDRK	- 5///2												
231	0605152	32.6N 127.6E	LDRK	- CIRCULAR EYE OPEN TO SE AND S, 30 PERCENT WALL CLOUD												
232	0606002	32.8N 127.5E	LDRK	- 5///2												
233	0606002	32.7N 127.5E	LDRK	- POOR FIX												
234	0606152	32.8N 127.7E	LDRK	- CIRCULAR EYE OPEN TO SE AND S, 40 PERCENT WALL CLOUD												
235	0606002	33.2N 127.8E	LDRK	- 5///2												
236	0611002	33.1N 128.0E	LDRK	- 5///2												
237	0611002	33.4N 128.1E	LDRK	- 13472												
238	0611152	33.6N 128.0E	LDRK	-												
239	0611202	33.3N 128.3E	LDRK	- POOR FIX												
240	0611202	34.1N 128.0E	SAT	(IM DATA )	PCN 5 DMSP											
241	0611202	34.0N 127.9E	SAT	(IM DATA )	PCN 4 DMSP											
242	0612002	33.5N 128.2E	LDRK	- 20932												
243	0613002	33.7N 128.3E	LDRK	- 20932												
244	0614002	33.8N 128.3E	LDRK	- 30912												
245	0615002	33.9N 128.4E	LDRK	- 20972												
246	0615552	33.6N 128.1E	SAT	(IM DATA )	PCN 4 DMSP											
247	0616002	34.1N 128.6E	LDRK	- 22912												
248	0617002	34.4N 128.8E	LDRK	- 20912												
249	0619002	35.0N 129.2E	LDRK	- 20922												
250	0619552	35.2N 129.5E	LDRK	-												
251	0620002	35.3N 129.5E	LDRK	- 205/2												
252	0621002	35.6N 129.5E	LDRK	- 55/4												
253	0622002	35.9N 129.7E	LDRK	- 55/42												
254	0622502	36.0N 130.0E	SAT	(12.0/3.0 /W1.0/24HRS)	PCN 3 DMSP											
255	0623002	36.2N 129.9E	LDRK	- 0///2			</td									

TROPICAL STORM HARRIET  
FIX POSITIONS FOR CYCLONE NO. 10  
0600Z 15 JUL TO 0600Z 18 JUL

FIX NO.	TIME	POSIT	FIX ACCRY	FIX CAT	MAX OBS LVL	MAX OWS SFC WIND	OWS MIN	MIN 700MB LVL	EYE	ORIENT	FLT MGT	MUSIT OF	MSN
				CAT NAV-MET	LVL DIR VEL BRG RNG	SFC WIND VEL ONG RNG	SLP	HGT	T1/T0 FORM	FATN TATION	DIA	NADAR	NMNR
1	122242Z	10.8N 148.4E	SAT	(T1.0/1.0 / / MHS)	PCN 5 DMSP								
2	122330Z	12.0N 149.0E	SAT	(T1.5/1.5 /D1.0/24MHS)	NOAA-2								
3	130103Z	11.1N 148.3E	SAT	(IR DATA )	PCN 5 DMSP								
4	131037Z	13.0N 147.0E	SAT	(IR DATA )	NOAA-2								
5	131123Z	12.3N 146.7E	SAT	(IR DATA )	PCN 5 DMSP								
6	131345Z	12.7N 146.2E	SAT	(IR DATA )	PCN 6 DMSP								
7	132224Z	14.2N 145.9E	SAT	(T2.0/2.0 /D1.0/24MHS)	PCN 6 DMSP								
8	140226Z	15.3N 144.2E	SAT	(IR DATA )	PCN 5 DMSP								
9	141105Z	15.1N 142.7E	SAT	(IR DATA )	PCN 3 DMSP								
10	141107Z	15.0N 142.5E	SAT	(IR DATA )	NOAA-2								
11	141508Z	16.0N 141.9E	SAT	(IR DATA )	PCN 3 DMSP								
12	141508Z	16.0N 141.9E	SAT	(IR DATA )	PCN 3 DMSP								
13	142323Z	16.9N 139.1E	SAT	(T2.5/2.5 /S /23MHS)	NOAA-2								
14	142324Z	17.3N 138.5E	SAT	(IR DATA )	NOAA-2								
15	142347Z	17.8N 140.3E	SAT	(T2.0/2.0 / / MHS)	PCN 5 DMSP								
16	142347Z	17.5N 140.7E	SAT	(T2.0/2.0 /S /25MHS)	PCN 5 DMSP								
17	150207Z	17.7N 139.1E	SAT	(IR DATA )	PCN 5 DMSP								
18	150207Z	17.5N 139.5E	SAT	(IR DATA )	PCN 5 DMSP								
19	150430Z	17.8N 139.2E	P	10 5 1500 130 45 00	10 40 60 10 1001	-	24 23	-	-	-	-		1
20	150930Z	18.7N 138.4E	P	10 1 1500 50 48 320	25 40 60 25 996	-	25 23	-	-	-	-		
21	151403Z	19.0N 137.8E	SAT	(IR DATA )	NOAA-2								
22	151203Z	19.0N 138.0E	SAT	(IR DATA )	NOAA-2								
23	151228Z	18.8N 137.9E	SAT	(IR DATA )	PCN 5 DMSP								
24	151228Z	19.3N 137.9E	SAT	(IR DATA )	PCN 5 DMSP								
25	151449Z	19.9N 136.9E	SAT	(IR DATA )	PCN 3 DMSP								
26	151449Z	19.9N 136.9E	SAT	(IR DATA )	PCN 5 DMSP								
27	151555Z	19.6N 136.3E	P	5 10 700 200 28 70	40 - - 1009 313 11	-	-	-	-	-	-		2
28	152040Z	20.5N 136.1E	P	3 2 700 130 55 30	30 4 310 10 997 308 15 11	-	-	-	-	-	-		2
29	152329Z	21.0N 135.7E	SAT	(T3.0/3.0 /D1.0/24MHS)	PCN 3 DMSP								
30	152329Z	21.0N 135.8E	SAT	(T3.0/3.0 /D1.0/24MHS)	PCN 3 DMSP								
31	160016Z	21.0N 135.0E	SAT	(T2.5/3.0 /WU.5/24MHS)	NOAA-2								
32	160017Z	21.0N 134.5E	SAT	(11.5/2.0 /W1.0/24MHS)	NOAA-2								
33	160149Z	21.6N 135.1E	SAT	(IR DATA )	PCN 3 DMSP								
34	160149Z	21.5N 135.0E	SAT	(IR DATA )	PCN 3 DMSP								
35	160351Z	22.0N 134.9E	P	5 3 700 250 30 170	65 50 90 15 998 309 15 12	-	-	-	-	-	-		3
36	160952Z	23.1N 134.2E	P	5 2 700 240 30 160	38 4 160 38 998 309 15 12	-	-	-	-	-	-		3
37	161210Z	22.6N 132.6E	SAT	(IR DATA )	PCN 1 DMSP								
38	161210Z	22.8N 133.5E	SAT	(IR DATA )	PCN 5 DMSP								
39	161431Z	23.0N 132.3E	SAT	(IR DATA )	PCN 5 DMSP								
40	161431Z	23.2N 132.6E	SAT	(IR DATA )	PCN 5 DMSP								
41	161612Z	24.2N 133.3E	SAT	(IR DATA )	PCN 5 DMSP								
42	161700Z	24.1N 132.8E	P	20 3 700 190 30 120	25 - - 1001 310 15	-	-	-	-	-	-		4
43	162118Z	24.8N 132.7E	P	5 2 700 220 40 150	100 40 60 40 1002 311 15	-	-	-	-	-	-		4
44	162310Z	25.1N 133.1E	SAT	(T2.0/3.0 /W1.0/24MHS)	PCN 3 DMSP								
45	162310Z	25.0N 133.0E	SAT	(T2.0/3.0 /W1.0/24MHS)	PCN 3 DMSP								
46	170111Z	26.0N 133.4E	SAT	(11.5/2.0 /S /25MHS)	NOAA-2								
47	170312Z	26.1N 133.0E	SAT	(IR DATA )	PCN 3 DMSP								
48	170312Z	26.1N 132.7E	SAT	(IR DATA )	PCN 3 DMSP								
49	171152Z	27.8N 133.2E	SAT	(IR DATA )	PCN 6 DMSP								
50	171152Z	27.6N 132.8E	SAT	(IR DATA )	PCN 3 DMSP								
51	171554Z	28.5N 134.1E	SAT	(IR DATA )	PCN 3 DMSP								
52	171850Z	27.0N 132.0E	SAT	(IR DATA )	NOAA-2								
53	172252Z	29.2N 135.0E	SAT	(T1.0/2.0 /W1.0/24MHS)	PCN 3 DMSP								
54	172252Z	29.1N 135.0E	SAT	(T1.0/2.0 /W1.0/24MHS)	PCN 3 DMSP								
55	180253Z	29.2N 135.8E	SAT	(IR DATA )	PCN 3 DMSP								
56	180253Z	29.0N 135.7E	SAT	(IR DATA )	PCN 3 DMSP								
57	181134Z	29.7N 138.1E	SAT	(IR DATA )	PCN 3 DMSP								

TROPICAL STORM JEAN  
FIX POSITIONS FOR CYCLONE NO. 11  
0300Z 17 JUL TO 0600Z 20 JUL

FIX NO.	TIME	POSIT	FIX ACCRY	FIX CAT	MAX OBS LVL	MAX OWS SFC WIND	OWS MIN	MIN 700MB LVL	EYE	ORIENT	FLT MGT	MUSIT OF	MSN
				CAT NAV-MET	LVL DIR VEL BRG RNG	SFC WIND VEL ONG RNG	SLP	HGT	T1/T0 FORM	FATN TATION	DIA	NADAR	NMNR
1	150207Z	16.8N 132.3E	SAT	(T1.0/1.0 / / MHS)	PCN 3 DMSP								
2	150207Z	16.8N 132.8E	SAT	(11.5/1.5 / / MHS)	PCN 5 DMSP								
3	151228Z	17.3N 129.7E	SAT	(IR DATA )	PCN 5 DMSP								
4	151449Z	18.2N 128.5E	SAT	(IR DATA )	PCN 5 DMSP								
5	151449Z	18.3N 128.3E	SAT	(IR DATA )	PCN 5 DMSP								
6	152249Z	17.7N 129.3E	SAT	(T1.5/1.5 /D0.5/24MHS)	PCN 3 DMSP								
7	152329Z	17.8N 129.4E	SAT	(T2.0/2.0 /D0.5/24MHS)	PCN 3 DMSP								
8	160118Z	17.8N 129.0E	SAT	(11.5/1.5 /D1.0/24MHS)	NOAA-2								
9	160330Z	17.8N 128.6E	SAT	(IR DATA )	PCN 5 DMSP								
10	160330Z	18.0N 128.5E	SAT	(IR DATA )	PCN 5 DMSP								
11	160512Z	18.3N 128.8E	P	5 15 1500 210 25 130	25 25 130 20 1004	-	20	-	-	-	-		1
12	161210Z	18.5N 128.4E	SAT	(IR DATA )	PCN 5 DMSP								
13	161210Z	19.0N 127.6E	SAT	(IR DATA )	PCN 5 DMSP								
14	161912Z	19.7N 128.0E	SAT	(IR DATA )	PCN 3 DMSP								
15	162310Z	19.7N 127.3E	SAT	(T2.0/2.0 /D0.5/24MHS)	PCN 3 DMSP								
16	162310Z	19.8N 127.3E	SAT	(13.0/3.0 /D1.0/24MHS)	PCN 3 DMSP								
17	170113Z	20.0N 126.8E	SAT	(T2.0/2.0 /D0.5/24MHS)	NOAA-2								
18	170312Z	19.7N 126.9E	SAT	(IR DATA )	PCN 3 DMSP								
19	170312Z	19.9N 126.9E	SAT	(IR DATA )	PCN 3 DMSP								
20	171152Z	20.2N 126.1E	SAT	(IR DATA )	PCN 5 DMSP								
21	171152Z	20.4N 125.9E	SAT	(IR DATA )	PCN 6 DMSP								
22	171152Z	19.7N 125.6E	SAT	(IR DATA )	NOAA-2								
23	171441Z	20.3N 126.3E	P	10 10 700 40 30 320	50 - - 499 307 13 11	-	-	-	-	-	-		3
24	171554Z	20.5N 126.2E	SAT	(IR DATA )	PCN 3 DMSP								
25	171554Z	20.6N 126.1E	SAT	(IR DATA )	PCN 3 DMSP								
26	172430Z	21.2N 125.3E	P	10 2 700 120 38 60	30 4 60 45 498 307 12	-	-	-	-	-	-		*
27	180013Z	20.8N 125.0E	SAT	(13.0/3.0 /D0.5/24MHS)	NOAA-2								
28	180034Z	21.2N 125.3E	SAT	(13.0/3.0 / / MHS)	PCN 3 DMSP								
29	180253Z	21.2N 124.5E	SAT	(13.0/3.5 /D1.5/24MHS)	PCN 3 DMSP								
30	180253Z	21.2N 123.9E	SAT	(13.0/3.5 /D0.5/24MHS)	PCN 3 DMSP								

TROPICAL STORM JEAN  
 FIX POSITIONS FOR CYCLONE NO. 11  
 0000Z 17 JUL to 0600Z 20 JUL

FIX NO.	TIME	POSIT	FIX ACCUR	FIX CAT	MAX OBS LVL	MAX OBS WIND	OBS SFC WIND	MIN VDMMG LVL	MIN VEL ORG RNG	MIN SLP	MIN HGT	MIN TIV/O	EYE FORM	ORIENTATION	EYE DIA	MUSI1 OF RADI	MSK NAME
31	180900Z	21.8N 123.1E	LHDR	- 6//UU												24.3N 124+2E	
32	181000Z	21.8N 123.4E	LHDR	- 7///												24.3N 125+3E	
33	181100Z	22.0N 123.7E	LHDR	- 6//UU												24.3N 124+2E	
34	181100Z	22.0N 123.7E	LHDR	- 7///												24.3N 125+3E	
35	181200Z	22.1N 123.5E	LHDR	- 55//U												24.3N 124+2E	
36	181200Z	22.1N 123.6E	LHDR	- 7///												24.3N 125+3E	
37	181202Z	22.1N 123.9E	P	> 2 700	140	45	60	30	-	-	-	995	307	14 11	-	-	-
38	181252Z	22.6N 124.0E	SAT	(IR DATA										(CONF 01)			
39	181300Z	22.2N 123.4E	LHDR	- 7///												24.3N 125+3E	
40	181300Z	22.2N 123.2E	LHDR	- 6///												24.3N 124+2E	
41	181315Z	22.4N 124.0E	SAT	(IR DATA												24.3N 125+3E	
42	181315Z	22.5N 123.5E	SAT	(IR DATA												24.3N 124+2E	
43	181400Z	22.2N 123.2E	LHDR	- 7///												24.3N 125+3E	
44	181400Z	22.3N 123.1E	LHDR	- 6//1												24.3N 124+2E	
45	181450Z	22.8N 123.1E	LHDR	- 55//3												24.3N 121+6E	
46	181500Z	22.4N 123.0E	LHDR	- 5//1												24.3N 124+2E	
47	181500Z	22.4N 123.0E	LHDR	- 7///												24.3N 125+3E	
48	181525Z	22.4N 123.1E	P	> 2 700	120	55	340	70	-	-	-	995	305	14 13	-	-	-
49	181535Z	22.6N 122.8E	SAT	(IR DATA												24.3N 125+3E	
50	181535Z	22.6N 122.9E	SAT	(IR DATA												24.3N 124+2E	
51	181600Z	22.6N 122.9E	LHDR	- 7///												24.3N 125+3E	
52	181600Z	22.6N 123.0E	LHDR	- 5//1												24.3N 124+2E	
53	181700Z	22.7N 122.8E	LHDR	- 7///												24.3N 125+3E	
54	181800Z	22.8N 123.3E	LHDR	- 45//13												24.3N 121+6E	
55	181800Z	22.9N 122.8E	LHDR	- 6//11												24.3N 124+2E	
56	181800Z	23.1N 122.8E	LHDR	- 7///1												24.3N 125+3E	
57	181900Z	23.1N 122.8E	LHDR	- 5//1												24.3N 124+2E	
58	182000Z	23.3N 122.6E	LHDR	- 6//1												24.3N 124+2E	
59	182000Z	23.3N 122.7E	LHDR	- 7///1												24.3N 125+3E	
60	182100Z	23.3N 122.7E	LHDR	- 7///1												24.3N 125+3E	
61	182100Z	23.3N 122.5E	LHDR	- 5//1												24.3N 124+2E	
62	182200Z	23.4N 122.5E	LHDR	- 6//1												24.3N 124+2E	
63	182300Z	23.6N 122.4E	LHDR	- 6//1												24.3N 124+2E	
64	182305Z	23.6N 123.0E	LHDR	- GOOD FIX												24.3N 121+6E	
65	190005Z	23.8N 122.8E	LHDR	- GOOD FIX, ELLIPTICAL EYE E-W												24.3N 120+6E	
66	190015Z	23.7N 122.6E	SAT	(IR DATA												24.3N 124+2E	
67	190015Z	23.7N 122.4E	SAT	(T4.0/4.0 / / MHS)												24.3N 125+3E	
68	190015Z	23.8N 122.4E	SAT	(T4.5/4.5 / D1.0/24MHS)												24.3N 124+2E	
69	190100Z	23.9N 122.5E	LHDR	- 6//3												24.3N 124+2E	
70	190106Z	23.9N 122.0E	SAT	(T3.0/3.0 / 5 / 25HRS)												24.3N 124+2E	
71	190120Z	24.1N 122.5E	LHDR	- FAIR FIX, TEAM DROP EYE												24.3N 122+0E	
72	190200Z	24.0N 122.3E	LHDR	- 5//2												24.3N 125+3E	
73	190220Z	24.2N 122.3E	LHDR	- ELLIPTICAL EYE 34/30												24.3N 122+0E	
74	190320Z	24.3N 122.3E	SAT	(T4.0/4.0 / 0.5/24MHS)												24.3N 122+0E	
75	190325Z	24.1N 122.1E	SAT	(IR DATA												24.3N 124+2E	
76	190320Z	24.1N 122.2E	LHDR	- CIRCULAR EYE, 45 NM DIAM												24.3N 122+0E	
77	190400Z	24.7N 122.2E	LHDR	- 6//1												24.3N 124+2E	
78	190400Z	24.7N 122.0E	LHDR	- 5//1												24.3N 125+3E	
79	190400Z	24.6N 122.1E	LHDR	- CIRCULAR EYE, 22 NM DIAM, OPEN TO NW-8												24.3N 121+8E	
80	190420Z	24.6N 122.1E	LHDR	- CIRCULAR EYE, 22 NM DIAM, OPEN TO NW-8												24.3N 122+0E	
81	190500Z	24.9N 122.2E	LHDR	- 6//2												24.3N 124+2E	
82	190500Z	24.9N 121.8E	LHDR	- 47//												24.3N 125+3E	
83	190800Z	25.5N 122.0E	LHDR	- 6//1												24.3N 124+2E	
84	191257Z	25.4N 122.5E	SAT	(IR DATA												24.3N 122+0E	
85	191257Z	26.5N 121.7E	SAT	(IR DATA												24.3N 123+5E	
86	191517Z	27.6N 121.6E	SAT	(IR DATA												24.3N 124+2E	
87	191517Z	27.2N 121.0E	SAT	(IR DATA												24.3N 125+3E	
88	192357Z	30.1N 122.1E	SAT	(T1.5/2.5 / W3.0/24MHS)												24.3N 124+2E	
89	200005Z	30.1N 122.0E	SAT	(T2.5/2.5 / W0.5/23HRS)												24.3N 124+2E	
90	200216Z	31.0N 122.3E	SAT	(IR DATA												24.3N 125+3E	

TYPHOON IVY  
FIX POSITIONS FOR CYCLONE NO. 12  
0600Z 17 JUL TO 1800Z 22 JUL

FIX NO.	TIME	POSIT	FIX CAT	ACCRY	MAX OBS LVL	MAX OBS LVL	OBS SFC WIND	MIN VEL	FLT SLP	EYE	URIN- IATION	EYE	MHS	MHS	MSN NNBR	PUSIT OF
1	150207Z	11.4N 151.4E	SAT	(T1.0/1.0 /	/ HRS)	PCN 5	DMS									
2	151047Z	11.4N 149.7E	SAT	(IR DATA	)	PCN 5	DMS									
3	151049Z	11.3N 147.9E	SAT	(IR DATA	)	PCN 5	DMS									
4	151049Z	11.1N 148.0E	SAT	(IR DATA	)	PCN 5	DMS									
5	160149Z	11.4N 146.8E	SAT	(T1.5/1.5 /D0.5/24HRS)		PCN 3	DMS									
6	161029Z	11.5N 144.2E	SAT	(IR DATA	)	PCN 6	DMS									
7	161431Z	11.4N 143.2E	SAT	(IR DATA	)	PCN 5	DMS									
8	162310Z	11.6N 140.6E	SAT	(T2.0/2.0 /D0.5/24HRS)		PCN 5	DMS									
9	162320Z	11.1N 139.0E	SAT	(T1.5/1.5 /D1.0/24HRS)		NOAA-2										
10	170130Z	12.2N 139.4E	SAT	(IR DATA	)	PCN 5	DMS									
11	170605Z	11.8N 139.5E	P	5 5 1900	50 30 310	40 3 310	40 10002	- 22 42	CIR							
12	170925Z	12.0N 138.7E	P	8 10 700	130 35 60	40 30 60	40 1004	310 9 9	CINC							
13	171152Z	12.2N 137.5E	SAT	(IR DATA	)	PCN 5	DMS									
14	171152Z	12.0N 137.5E	SAT	(IR DATA	)	PCN 6	DMS									
15	171412Z	12.0N 136.7E	SAT	(IR DATA	)	PCN 5	DMS									
16	171412Z	12.0N 136.8E	P	5 5 700	170 35 100	95 - -	1002	309 10 7	CIRC							
17	172045Z	13.1N 135.2E	P	5 1 700	110 60 10	20 60 130	18 997	306 11 10	CIRC							
18	172252Z	13.0N 134.3E	SAT	(T3.5/3.5 /D1.5/24HRS)		PCN 5	DMS									
19	172252Z	13.3N 134.3E	SAT	(T2.5/2.5 / / HRS)		PCN 3	DMS									
20	172252Z	13.1N 134.4E	SAT	(T3.5/3.5 / / HRS)		PCN 3	DMS									
21	180015Z	13.0N 136.2E	SAT	(T3.0/3.0 /D1.0/25HRS)		NOAA-2										
22	180253Z	13.2N 133.2E	SAT	(IR DATA	)	PCN 1	DMS									
23	180253Z	13.5N 133.4E	SAT	(IR DATA	)	PCN 3	DMS									
24	181057Z	13.6N 131.3E	SAT	(IR DATA	)	NOAA-2										
25	181134Z	14.2N 131.1E	SAT	(IR DATA	)	PCN 5	DMS									
26	181134Z	14.0N 130.9E	SAT	(IR DATA	)	PCN 5	DMS									
27	181228Z	14.2N 130.8E	P	5 2 700	130 80 90	20 - -	987	297 14 10	CIR							
28	181535Z	14.2N 130.0E	SAT	(IR DATA	)	PCN 5	DMS									
29	181559Z	14.3N 130.0E	P	5 2 700	180 75 150	20 - -	479	292 16 10	CIR							
30	182130Z	14.6N 128.6E	P	8 5 700	30 70 340	20 100 360	5 971	283 17 10	ELIP	N-S	15X10					
31	190015Z	14.7N 127.7E	SAT	(T4.5/4.5 /D1.0/24HRS)		PCN 1	DMS									
32	190115Z	14.8N 127.8E	SAT	(T4.5/4.5 / / HRS)		PCN 1	DMS									
33	190115Z	14.8N 127.8E	SAT	(T5.0/5.0 /D1.0/25HRS)		NOAA-2										
34	191010Z	14.1N 127.0E	SAT	(IR DATA	)											
35	190235Z	14.8N 127.0E	SAT	(IR DATA	)	PCN 1	DMS									
36	190235Z	14.8N 126.6E	SAT	(T5.0/5.0 /D1.5/28HRS)		PCN 1	DMS									
37	190830Z	14.9N 125.8E	LHR	- POSSIBLE EYE, ELLIPTICAL AXIS 20/30, 50 PERCENT WALL CLOUD												
38	190830Z	14.8N 125.8E	P	5 1 700	210 100 300	5 120 30 6 466	263 10 12	ELIP	N-S	10X 7	14.0N 122.0E					
39	190930Z	14.9N 125.6E	LHR	- CIRCULAR EYE 19 NM DIAM, 80 PERCENT WALL CLOUD												
40	191000Z	14.9N 125.5E	LHR	- CIRCULAR EYE 7 NM DIAM, 70 PERCENT WALL CLOUD												
41	191030Z	14.9N 125.4E	LHR	- CIRCULAR EYE OPEN NW, 5 NM DIAM, 50 PERCENT WALL CLOUD												
42	191030Z	14.8N 125.3E	P	- 700 - - - - -	- - - - -	945 - - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	
43	191100Z	14.9N 125.2E	LHR	- CIRCULAR EYE OPEN N, 7 NM DIAM, 50 PERCENT WALL CLOUD												
44	191130Z	14.3N 125.2E	LHR	- CIRCULAR EYE OPEN N, 7 NM DIAM, 80 PERCENT WALL CLOUD												
45	191153Z	14.0N 125.0E	SAT	(IR DATA	)	NOAA-2										
46	191200Z	14.9N 125.1E	LHR	- CIRCULAR EYE+ 50 PERCENT WALL CLOUD												
47	191257Z	14.9N 124.9E	SAT	(IR DATA	)	PCN 5	DMS									
48	191257Z	14.1N 122.8E	SAT	(IR DATA	)	PCN 5	DMS									
49	191300Z	14.9N 124.9E	LHR	- CIRCULAR EYE OPEN W, 80 PERCENT WALL CLOUD												
50	191302Z	15.0N 124.8E	LHR	- CIRCULAR EYE 8 NM DIAM, 100 PERCENT WALL CLOUD												
51	191400Z	15.0N 124.7E	LHR	- CIRCULAR EYE OPEN NNN, 7 NM DIAM, 60 PERCENT WALL CLOUD												
52	191430Z	15.0N 124.6E	LHR	- CIRCULAR EYE OPEN NWW, 7 NM DIAM, 60 PERCENT WALL CLOUD												
53	191500Z	15.1N 124.4E	LHR	- CIRCULAR EYE 6 NM DIAM, 100 PERCENT CONCENTRIC												
54	191517Z	15.4N 124.1E	SAT	(IR DATA	)	PCN 1	DMS									
55	191517Z	15.0N 124.0E	SAT	(IR DATA	)	PCN 5	DMS									
56	191530Z	15.2N 124.2E	LHR	- CIRCULAR EYE OPEN NW, 9 NM DIAM, 70 PERCENT WALL CLOUD												
57	191530Z	15.1N 124.3E	P	5 3 700	20 85 230	12 - - -	952 268 15 12	CIRC								
58	191630Z	15.2N 124.0E	LHR	- CIRCULAR EYE 9 NM DIAM, 100 PERCENT WALL CLOUD												
59	191700Z	15.3N 123.9E	LHR	- CIRCULAR EYE OPEN NNN, 7 NM DIAM, 90 PERCENT WALL CLOUD												
60	191800Z	15.3N 123.6E	LHR	- CIRCULAR EYE 6 NM DIAM, 100 PERCENT WALL CLOUD												
61	191830Z	15.3N 123.4E	LHR	- ELLIPTICAL EYE 8X10 NM, 100 PERCENT WALL CLOUD												
62	191900Z	15.3N 123.3E	LHR	- ELLIPTICAL EYE 7X10 NM, 100 PERCENT WALL CLOUD												
63	191930Z	15.3N 123.2E	LHR	- ELLIPTICAL EYE 7X10 NM, 100 PERCENT WALL CLOUD												
64	192032Z	15.3N 123.0E	P	2 2 700	350 80 290	20 - - -	948 262 10 -	CIR								
65	192035Z	15.4N 122.9E	LHR	- FAIR FIX, 10 DEG SPIRAL OVERLAY												
66	192100Z	15.4N 122.8E	LHR	- CIRCULAR EYE OPEN NNE, 8 NM DIAM, 90 PERCENT WALL CLOUD												
67	192105Z	15.4N 122.8E	LWR	- FAIR FIX, POSSIBLE EYE, 10 DEG SPIRAL OVERLAY												
68	192135Z	15.6N 122.6E	LHR	- FAIR FIX, POSSIBLE EYE, 10 DEG SPIRAL OVERLAY												
69	192207Z	15.5N 122.4E	LHR	- FAIR FIX, POSSIBLE EYE, 15 DEG SPIRAL OVERLAY												
70	192215Z	15.6N 122.5E	LHR	- CIRCULAR EYE 20 NM DIAM, 100 PERCENT WALL CLOUD												
71	192238Z	15.6N 122.3E	LHR	- FAIR FIX, POSSIBLE EYE, 10 DEG SPIRAL OVERLAY												
72	192300Z	15.6N 122.3E	LHR	- FAIR FIX, POSSIBLE EYE, 10 DEG SPIRAL OVERLAY												
73	192308Z	15.6N 122.2E	LHR	- CIRCULAR EYE OPEN NNN, 20 NM DIAM, 90 PERCENT WALL CLOUD												
74	192330Z	15.6N 122.2E	LHR	- CIRCULAR EYE OPEN NNN, 20 NM DIAM, 90 PERCENT WALL CLOUD												
75	192357Z	15.3N 122.1E	SAT	(T4.5/5.5-W /24HRS)		PCN 3	DMSP									
76	192357Z	15.6N 122.0E	SAT	(T4.5/5.5-W /24HRS)		PCN 5	DMSP									
77	192357Z	15.5N 122.0E	P	(T5.5/5.5-W /21HRS)		PCN 3	DMSP									
78	192358Z	15.6N 122.4E	P	1 5 700	180 100 90	15 14W - - -	267 - - -	CIRC								
79	200000Z	15.5N 122.1E	LHR	- OVAL EYE, 15X20 NM NW/SE, 100 PERCENT WALL CLOUD												
80	200007Z	15.2N 122.0E	LHR	- GOOD FIX, CIRCULAR EYE 25 NM LLM, 80 PERCENT WALL CLOUD												
81	200036Z	15.3N 121.8E	LHR	- GOOD FIX												
82	200100Z	15.6N 121.9E	LHR	- OVAL EYE 15X22 NM, 100 PERCENT WALL CLOUD												
83	200106Z	15.4N 121.7E	LHR	- GOOD FIX, CIRCULAR EYE 25 NM DIAM												
84	200136Z	15.3N 121.6E	LHR	- GOOD FIX, CIRCULAR EYE 25 NM DIAM												
85	200200Z	15.6N 121.8E	LHR	- GOOD FIX, CIRCULAR EYE 17 NM DIAM, 100 PERCENT WALL CLOUD												

TYPHOON IVY  
FIX POSITIONS FOR CYCLONE NO. 12  
0600Z 17 JUL TO 1800Z 22 JUL

FIX NO.	TIME	POSII	FIX CAT	ACCRY	MAX OBS	MAX OBS	OBS	MIN	FLT	PUSIT OF	MSN
			NAV-MET	FLT LVL	SFC WIND	DIR VEL	BNG RNG	SLP	LVL MGT	URIEEN-	NMHR
			LHD/R	WIND	VEL	BNG	RNG		TI/TO FORM	EYE TATION	DIA
101	200808Z	16.1N 120.3E	LHD/R	- FAIR	FIX, POSSIBLY EYE,	15 DEG	SPIRAL OVERLAY			15.2N 120.6E	
102	200938Z	16.3N 119.9E	LHD/R	- POOR	FIX, POSSIBLY EYE,	15 DEG	SPIRAL OVERLAY			15.2N 120.6E	
103	201009Z	16.3N 120.0E	LHD/R	- FAIR	FIX, POSSIBLY EYE,	15 DEG	SPIRAL OVERLAY			15.2N 120.6E	
104	201239Z	16.7N 119.0E	SAT	(IR DATA	)	PCN 5	DMSP				
105	201239Z	16.6N 118.4E	SAT	(IR DATA	)	PCN 5	DMSP				
106	201247Z	17.0N 119.0E	SAT	(IR DATA	)	NOAA-2	(CONF 03)				
107	201252Z	17.3N 118.3E	P	1 15	700	160	80	40	13	- - -	7
108	201639Z	17.7N 118.2E	SAT	(IR DATA	)	PCN 5	DMSP				
109	202152Z	17.6N 117.0E	P	5	2	700	270	50	110	35 60 00	30 975 291 12 11 CTMC 35
110	202338Z	17.5N 116.9E	SAT	(IR DATA	)	PCN 5	DMSP				
111	202339Z	18.0N 117.1E	SAT	(T+0.5/4.5 /S1.0/24HRS)		PCN 3	DMSP				
112	210103Z	18.0N 116.0E	SAT	(T+0.5/5.0 /D0.5/24HRS)		NOAA-2	(CONF 01)				
113	210120Z	17.9N 116.5E	SAT	(T+0.5/5.0 /D0.5/24HRS)		PCN 1	DMSP				
114	210339Z	18.1N 115.9E	SAT	(T+0.5/5.0 /D0.5/24HRS)		PCN 1	DMSP				
115	210339Z	18.6N 116.1E	SAT	(T+0.5/4.5 / / HRS)		PCN 1	DMSP				
116	210900Z	18.7N 114.9E	LHD/R	- 2000/						22.3N 114.2E	
117	211035Z	18.9N 114.9E	P	5	2	700	140	100	70	40 100 70	55 967 281 15 10 ELIP SW-NE 25X23
118	211200Z	18.9N 114.4E	LHD/R	- 2///						22.3N 114.2E	8
119	211344Z	20.0N 115.0E	SAT	(IR DATA	)	NOAA-2	(CONF 02)				
120	211402Z	19.4N 114.2E	SAT	(IR DATA	)	PCN 5	DMSP				
121	211452Z	19.2N 114.2E	P	5	2	700	-	-	-	965	279 17 - ELIP E-W 30X27
122	211500Z	19.2N 114.0E	LHD/R	- 20///						22.3N 114.2E	
123	211621Z	19.6N 113.9E	SAT	(IR DATA	)	PCN 5	DMSP				
124	212100Z	19.8N 113.2E	LHD/R	- 2///						22.3N 114.2E	
125	220000Z	20.2N 112.9E	LHD/R	- 105//						22.3N 114.2E	
126	220100Z	20.2N 112.8E	SAT	(T+0.5/5.0 /D0.5/24HRS)		PCN 1	DMSP				
127	220300Z	20.4N 112.7E	LHD/R	- 105//						22.3N 114.2E	
128	220314Z	20.4N 112.6E	SAT	(T+0.5/5.0 /D0.5/24HRS)		PCN 1	DMSP				
129	220321Z	20.3N 112.1E	SAT	(T+0.5/6.0 / / HRS)		PCN 1	DMSP			22.3N 114.2E	
130	220400Z	20.9N 112.2E	LHD/R	- 1063/						22.3N 114.2E	
131	220900Z	21.3N 111.9E	LHD/R	- 1085/						22.3N 114.2E	
132	221000Z	21.6N 111.3E	LHD/R	- 1075/						22.3N 114.2E	
133	221244Z	21.8N 111.5E	SAT	(IR DATA	)	NOAA-2					
134	221602Z	21.4N 111.0E	SAT	(IR DATA	)	PCN 5	DMSP				
135	221602Z	21.8N 110.9E	SAT	(IR DATA	)	PCN 5	DMSP				
136	221602Z	22.8N 111.3E	SAT	(IR DATA	)	PCN 1	DMSP				

TROPICAL STORM KIM  
FIX POSITIONS FOR CYCLONE NO. 13  
0000Z 23 JUL TO 0600Z 24 JUL

FIX NO.	TIME	POSII	FIX CAT	ACCRY	MAX OBS	MAX OBS	OBS	MIN	FLT	PUSIT OF	MSN
			NAV-MET	FLT LVL	SFC WIND	DIR VEL	BNG RNG	SLP	LVL MGT	URIEEN-	NMHR
			LHD/R	WIND	VEL	BNG	RNG		TI/TO FORM	EYE TATION	DIA
1	202157Z	17.6N 165.1E	SAT	(T1.0/1.0 / / HRS)		PCN 5	DMSP				
2	210016Z	18.5N 165.4E	SAT	(IR DATA	)	PCN 5	DMSP				
3	211039Z	19.7N 165.4E	SAT	(IR DATA	)	PCN 5	DMSP				
4	211258Z	19.9N 165.3E	SAT	(IR DATA	)	PCN 5	DMSP				
5	212139Z	20.9N 165.8E	SAT	(T1.0/1.0 / S / 24HRS)		PCN 3	DMSP				
6	221021Z	20.8N 165.3E	SAT	(IR DATA	)	PCN 5	DMSP				
7	222107Z	23.2N 167.1E	SAT	(T3.0/3.0 /D0.2/24HRS)		NOAA-2	(CONF 01)				
8	222140Z	23.0N 167.3E	SAT	(T1.5/1.5 /D0.5/24HRS)		PCN 6	DMSP				
9	222359Z	23.0N 165.3E	SAT	(T1.5/1.5 / / HRS)		PCN 5	DMSP				
10	230120Z	23.3N 166.1E	SAT	(IR DATA	)	PCN 5	DMSP				
11	230500Z	24.5N 169.0E	SAT	(IR DATA	)	NOAA-2					
12	231022Z	23.5N 166.0E	SAT	(IR DATA	)	PCN 6	DMSP				
13	232102Z	25.8N 167.9E	SAT	(T2.0/2.0 /S0.5/24HRS)		PCN 3	DMSP				
14	232202Z	26.0N 166.4E	SAT	(T3.5/3.5 /S / 25HRS)		NOAA-2	(CONF 01)				
15	232302Z	26.2N 167.7E	SAT	(T3.0/3.0 /D0.5/24HRS)		PCN 4	DMSP				
16	240122Z	26.7N 167.2E	SAT	(IR DATA	)	PCN 3	DMSP				
17	240122Z	26.8N 167.2E	SAT	(T2.0/2.0 / / HRS)		PCN 4	DMSP				
18	240122Z	25.5N 166.7E	SAT	(T2.0/2.0 /D0.5/24HRS)		PCN 3	DMSP				
19	240320Z	27.2N 166.3E	P	13	7	700	180	65	30	25 65 30	989 301 18 - - -
20	241047Z	26.8N 166.0E	SAT	(IR DATA	)	NOAA-2	(CONF 02)				
21	241344Z	26.5N 163.4E	SAT	(IR DATA	)	PCN 6	DMSP				

TROPICAL STORM LUCY  
FIX POSITIONS FOR CYCLONE NO. 14  
0000Z 09 AUG TO 0600Z 11 AUG

FIX NO.	TIME	PUSI	FIX CAT	ACCRY	FIX NAV-MET	FLT LVL	LVL	DIR	VEL	BRG	RNG	MAX OBS SLP	MAX OBS HGT	MIN FLY	TUOMB	LVL	EYE	URIEH-	EYE	PUSIT OF HAUAR	MSN NMBR
1	040422Z	12,2N 134.0E	SAT	(II,0/1.0	/							PCN 5	DMSP								
2	041128Z	14,0N 130.9E	SAT	(II, DATA								PCN 5	DMSP								
3	041309Z	13,2N 126.3E	SAT	(II, DATA								PCN 6	DMSP								
4	041524Z	13,6N 129.2E	SAT	(II, DATA								PCN 5	DMSP								
5	041524Z	13,2N 129.0E	SAT	(II, DATA								PCN 6	DMSP								
6	050009Z	16,0N 124.5E	SAT	(II,5/1.5	/							PCN 5	DMSP								
7	050009Z	16,0N 124.3E	SAT	(II,5/1.5	/00.5/24HRS)							PCN 5	DMSP								
8	050226Z	16,4N 123.8E	SAT	(II, DATA								PCN 5	DMSP								
9	051251Z	14,9N 122.9E	SAT	(II, DATA								PCN 5	DMSP								
10	051505Z	15,0N 122.6E	SAT	(II, DATA								PCN 5	DMSP								
11	052351Z	16,6N 121.6E	SAT	(II,0/1.5+/W0.5/24HRS)								PCN 5	DMSP								
12	060522Z	11,0N 134.9E	SAT	(II, DATA								NOAA-2	(CONF 03)								
13	080310Z	19,0N 118.6E	SAT	(II,0/1.0	/							PCN 5	DMSP								
14	081338Z	18,0N 116.3E	SAT	(II, DATA								PCN 5	DMSP								
15	081551Z	17,4N 117.9E	SAT	(II, DATA								PCN 5	DMSP								
16	081551Z	17,7N 117.8E	SAT	(II, DATA								PCN 5	DMSP								
17	090038Z	18,2N 117.2E	SAT	(II,0/1.0	/							PCN 5	DMSP								
18	090115Z	19,0N 118.0E	SAT	(II,0/2.0	/D1.0/24HRS)							NOAA-2	(CONF 02)								
19	090251Z	18,3N 117.9E	SAT	(II,5/1.5	/							PCN 5	DMSP								
20	090251Z	18,7N 117.4E	SAT	(II,5/1.5	/D0.5/24HRS)							PCN 3	DMSP								
21	090305Z	18,9N 119.2E	P	15	5 1500	50	25	330	30	25 330	30	994	-	26	-	-	-	-	1		
22	090433Z	18,0N 118.9E	SAT	(II, DATA								PCN 5	DMSP								
23	090955Z	19,7N 119.6E	P	10	5 700	230	50	170	150	4 170	30	-	305	14	-	-	-	-	3		
24	091319Z	20,2N 119.3E	SAT	(II, DATA								PCN 5	DMSP								
25	091431Z	20,7N 119.9E	P	3	20 700	-	-	-	-	-		9	973	61	30	-	-	-	3		
26	091532Z	20,4N 119.2E	SAT	(II, DATA								PCN 5	DMSP								
27	091532Z	21,0N 119.6E	SAT	(II, DATA								PCN 5	DMSP								
28	092253Z	20,2N 119.4E	P	1	5 1500	240	40	160	150	25 150	55	997	-	24	-	-	-	-	3		
29	100019Z	22,2N 119.2E	SAT	(II,0/3.0	/D2.0/24HRS)							PCN 5	DMSP								
30	100019Z	21,9N 118.9E	SAT	(II,5/1.5	/S							PCN 5	DMSP								
31	100019Z	22,5N 119.4E	SAT	(II,5/2.5	/D1.0/21HRS)							PCN 3	DMSP								
32	100208Z	23,5N 120.3E	SAT	(T3,0/3.0	/D1.0/25HRS)							NOAA-2	(CONF 02)								
33	100414Z	22,5N 118.9E	SAT	(II, DATA								PCN 5	DMSP								
34	100414Z	22,5N 120.1E	SAT	(II,0/3.0	/							PCN 5	DMSP								
35	101257Z	23,0N 118.9E	SAT	(II, DATA								NOAA-2	(CONF 02)								
36	101301Z	22,7N 119.5E	SAT	(II, DATA								PCN 5	DMSP								
37	101301Z	22,5N 119.2E	SAT	(II, DATA								PCN 6	DMSP								
38	101301Z	22,8N 119.7E	SAT	(II, DATA								PCN 5	DMSP								
39	110001Z	23,5N 118.6E	SAT	(T2,0/2.0	/D0.5/24HRS)							PCN 5	DMSP								
40	110001Z	23,6N 118.6E	SAT	(T2,0/2.5	/W0.5/24HRS)							PCN 3	DMSP								
41	110109Z	23,8N 118.0E	SAT	(T2,5/3.0	/W0.5/23HRS)							NOAA-2	(CONF 01)								
42	110356Z	24,4N 119.1E	SAT	(II,0/3.0	/S							PCN 3	DMSP								
43	111243Z	24,6N 119.2E	SAT	(II, DATA								PCN 5	DMSP								
44	111243Z	24,6N 118.7E	SAT	(II, DATA								PCN 5	DMSP								
45	111243Z	24,9N 118.7E	SAT	(II, DATA								PCN 6	DMSP								
46	112343Z	25,7N 117.9E	SAT	(II, DATA								PCN 5	DMSP								

TYPHOON MARY  
FIX POSITIONS FOR CYCLONE NO. 15  
0600Z 11 AUG TO 0600Z 26 AUG

TYPHOON MARY  
FIX POSITIONS FOR CYCLONE NO. 15  
0600Z 11 AUG TO 0600Z 26 AUG

46	141148Z	24.9N	143.9E	SAT	(IH DATA )	) PCN 5 DMSP
47	141148Z	24.6N	143.8E	SAT	(IH DATA )	) PCN 6 DMSP
48	141359Z	25.3N	143.4E	SAT	(IH DATA )	) PCN 4 DMSP
49	141359Z	24.8N	143.0E	SAT	(IH DATA )	) PCN 6 DMSP
50	142248Z	25.6N	142.3E	SAT	(T2.0/3.0 /W0.5/24HRS)	PCN 3 DMSP
51	142248Z	26.5N	142.4E	SAT	(T1.5/1.5 /W0.5/24HRS)	PCN 3 DMSP
52	142303Z	26.6N	142.5E	SAT	(T1.5/2.5 /W1.0/24HRS)	NOAA-2 (CONF 02)
53	150100Z	26.6N	141.5E	SAT	(IH DATA )	) PCN 5 DMSP
54	150100Z	26.9N	142.0E	SAT	(IH DATA )	) PCN 4 DMSP
55	150217Z	26.6N	141.9E	P	1 2 700 240 25 190	35 25 190 40 972 286 15 - - - -
56	150241Z	26.9N	141.6E	SAT	(IH DATA )	) PCN 3 DMSP
57	150241Z	26.8N	141.6E	SAT	(IH DATA )	) PCN 3 DMSP
58	150834Z	26.7N	141.2E	P	1 2 700 230 40 180	40 25 80 30 972 286 15 13 - - - -
59	151129Z	27.2N	140.7E	SAT	(IH DATA )	) PCN 4 DMSP
60	151130Z	26.8N	140.5E	SAT	(IH DATA )	) PCN 3 DMSP
61	151523Z	27.0N	139.8E	SAT	(IH DATA )	) PCN 3 DMSP
62	151523Z	27.1N	139.9E	SAT	(IH DATA )	) PCN 3 DMSP
63	152035Z	27.0N	138.8E	P	3 4 700 40 35 350	4 3 30 602 97 729 1 10 - - - -
64	152134Z	26.7N	138.5E	SAT	(IH DATA )	) PCN 3 DMSP
65	152230Z	26.8N	138.4E	SAT	(T3.0/3.0 /D1.0/24HRS)	PCN 3 DMSP
66	152230Z	26.8N	138.3E	SAT	(T2.5/2.5 /D1.0/24HRS)	PCN 3 DMSP
67	152338Z	26.8N	138.2E	SAT	(T2.5/2.5 /S /24HRS)	PCN 3 DMSP
68	160223Z	27.2N	138.2E	SAT	(IH DATA )	) PCN 3 DMSP
69	160232Z	26.9N	138.0E	SAT	(IH DATA )	) PCN 3 DMSP
70	160621Z	27.3N	137.6E	P	3 2 700 310 40 260	30 3 260 40 976 290 16 13 - - - -
71	161016Z	27.9N	137.3E	SAT	(IH DATA )	) PCN 4 DMSP
72	161049Z	26.8N	137.2E	SAT	(IH DATA )	) NOAA-2
73	161111Z	27.9N	138.8E	SAT	(IH DATA )	) PCN 3 DMSP
74	161111Z	27.9N	138.6E	SAT	(IH DATA )	) PCN 6 DMSP
75	161428Z	27.2N	135.6E	P	5 25 700 220 20 180	12 - - - 984 295 12 - - - -
76	161504Z	28.2N	136.3E	SAT	(IH DATA )	) PCN 3 DMSP
77	161504Z	29.1N	136.1E	SAT	(IH DATA )	) PCN 4 DMSP
78	162119Z	27.9N	134.4E	SAT	(IH DATA )	) PCN 3 DMSP
79	162353Z	27.7N	134.7E	SAT	(T3.5/3.5 /W0.5/25HRS)	PCN 3 DMSP
80	162353Z	27.8N	134.1E	SAT	(T3.5/3.5 /S1.0/25HRS)	PCN 3 DMSP
81	162353Z	27.6N	134.7E	SAT	(T2.0/2.0 / / HRS)	PCN 3 DMSP
82	170053Z	27.9N	134.1E	SAT	(T3.0/2.5 /W0.5/25HRS)	NOAA-2 (CONF 01)
83	170204Z	26.1N	133.7E	SAT	(IH DATA )	) PCN 3 DMSP
84	170204Z	28.1N	133.8E	SAT	(IH DATA )	) PCN 3 DMSP
85	170234Z	26.2N	133.8E	P	2 700 360 45 270	100 40 270 100 979 293 15 11 - - -
86	170803Z	26.4N	132.8E	P	1 2 700 120 50 40	90 - - - 968 284 16 12 CTMC 30
87	171002Z	26.2N	132.5E	SAT	(IH DATA )	) PCN 6 DMSP
88	171145Z	29.9N	131.0E	SAT	(IH DATA )	) NOAA-2
89	171235Z	26.3N	132.2E	SAT	(IH DATA )	) PCN 3 DMSP
90	171235Z	26.5N	132.1E	SAT	(IH DATA )	) PCN 4 DMSP
91	171300Z	29.4N	132.2E	LHDK	- 22752	30.6N 131.0E
92	171300Z	28.5N	132.3E	LHDK	- 25/6/	28.4N 129.5E
93	171400Z	28.7N	132.1E	LHDK	- 2548/	28.4N 129.5E
94	171406Z	28.7N	131.9E	SAT	(IH DATA )	) PCN 3 DMSP
95	171406Z	28.6N	132.0E	SAT	(IH DATA )	) PCN 3 DMSP
96	171500Z	28.7N	131.7E	LHDK	- 25/6/	28.4N 129.5E
97	171627Z	26.7N	130.2E	SAT	(IH DATA )	) PCN 4 DMSP
98	172104Z	26.4N	130.4E	SAT	(IH DATA )	) PCN 3 DMSP
99	172104Z	26.2N	130.4E	P	3 700 340 30 310	25 55 260 30 974 290 19 15 CTMC 35
100	172300Z	28.4N	130.4E	LHDK	- 12482	28.4N 129.5E
101	172335Z	26.6N	130.2E	SAT	(T4.0/4.0 /W0.5/24HRS)	PCN 3 DMSP
102	172335Z	26.8N	129.6E	SAT	(T3.5/3.5 /S /24HRS)	PCN 3 DMSP
103	172353Z	26.2N	129.7E	SAT	(T3.5/3.5 /W0.5/24HRS)	NOAA-2
104	180100Z	26.9N	130.0E	LHDK	- 11412	28.4N 129.5E
105	180135Z	28.9N	129.9E	P	- 700 - - - -	- - - - -
106	180145Z	28.7N	129.9E	SAT	(IH DATA )	) PCN 5 DMSP
107	180146Z	29.6N	129.4E	SAT	(IH DATA )	) PCN 3 DMSP
108	180200Z	29.0N	129.6E	LHDK	- 22/0/	30.6N 131.0E
109	180200Z	26.9N	129.6E	LHDK	- 12312	28.4N 129.5E
110	180231Z	24.9N	129.5E	P	10 5 700 150 55 60 100 70 30 60 - 290 19 16 CTMC 30	
111	180300Z	29.1N	129.3E	LHDK	- 3//4/	30.6N 131.0E
112	180300Z	29.0N	129.3E	LHDK	- 10412	28.4N 129.5E
113	180327Z	23.6N	129.0E	LHDK	- POOR FIX, 10 DEG SPIRAL OVERLAY	26.4N 127.0E
114	180327Z	29.1N	128.9E	SAT	(IH DATA )	) PCN 3 DMSP
115	180345Z	28.7N	128.8E	LHDK	- POOR FIX, 10 DEG SPIRAL OVERLAY	26.4N 127.0E
116	180400Z	29.0N	128.8E	LHDK	- 11312	28.4N 129.5E
117	180414Z	23.7N	128.7E	LHDK	- POOR FIX, 20 DEG SPIRAL OVERLAY	26.4N 127.0E
118	180440Z	31.0N	129.4E	AC_R	-	- - - -
119	180447Z	29.0N	128.7E	LHDK	- POOR FIX, 15 DEG SPIRAL OVERLAY	26.4N 127.0E
120	180500Z	29.0N	128.5E	LHDK	- 11312	28.4N 129.5E
121	180512Z	29.0N	128.7E	LHDK	- POOR FIX, 15-DEG SPIRAL OVERLAY	26.4N 127.0E
122	180540Z	29.0N	128.7E	LHDK	- POOR FIX, 15 DEG SPIRAL OVERLAY	26.4N 127.0E
123	180540Z	29.0N	128.6E	LHDK	- POOR FIX, 15 DEG SPIRAL OVERLAY	26.4N 127.0E
124	180800Z	24.7N	127.8E	LHDK	- 10412	28.4N 129.5E
125	180900Z	24.6N	127.7E	LHDK	- 11733	28.4N 129.5E
126	181000Z	24.5N	127.5E	LHDK	- 21523	28.4N 129.5E
127	181100Z	24.0N	127.5E	LHDK	- 11542	28.4N 129.5E
128	181200Z	28.7N	127.4E	LHDK	- 12443	28.4N 129.5E
129	181216Z	29.3N	127.0E	SAT	(IH DATA )	) PCN 5 DMSP
130	181216Z	29.1N	127.3E	SAT	(IH DATA )	) PCN 6 DMSP
131	181234Z	28.0N	127.5E	SAT	(IH DATA )	) NOAA-2
132	181300Z	24.6N	127.1E	LHDK	- 12513	28.4N 129.5E
133	181400Z	24.8N	126.8E	LHDK	- 11413	28.4N 129.5E
134	181557Z	28.6N	125.8E	P	3 2 700 220 60 160 40 - - - 975 290 17 - - - -	
135	181604Z	28.6N	126.1E	SAT	(IH DATA )	) PCN 5 DMSP
136	181604Z	28.8N	125.5E	SAT	(IH DATA )	) PCN 6 DMSP
137	182230Z	28.3N	124.5E	SAT	(IH DATA )	) PCN 3 DMSP
138	182316Z	28.6N	124.8E	SAT	(T3.5/4.0 /W0.5/24HRS)	PCN 3 DMSP
139	190309Z	29.1N	123.6E	SAT	(IH DATA )	) PCN 3 DMSP
140	190309Z	28.9N	123.5E	SAT	(T4.0/4.0 /W0.5/27HRS)	PCN 3 DMSP
141	191113Z	29.5N	121.6E	SAT	(IH DATA )	) PCN 3 DMSP
142	191113Z	29.0N	122.1E	SAT	(IH DATA )	) PCN 3 DMSP
143	222345Z	28.6N	125.3E	SAT	(T1.5/1.5 / / HRS)	PCN 5 DMSP

TYPHOON MARY  
FIX POSITIONS FOR CYCLONE NO. 15  
0600Z 11 AUG TO 0600Z 26 AUG

FIX NO.	TIME	POSIT.	FIX CAT	ACCRY	MAX OBS	MAX UBS	UBS	MIN	FLT	PUSIT OF
			NAV-MET	FLT LVL	LVL DIR VEL	BNG RNG	SLP	F0UMB	LVL HGT	MSK
									T1/T0	NMNM
144	231040Z	27.0N 124.6E	SAT	(IR DATA)	)	PCN 5	DMSP			
145	231012Z	27.0N 126.6E	SAT	(IR DATA)	)	PCN 4	DMSP			
146	231012Z	27.5N 125.6E	SAT	(IR DATA)	)	PCN 5	DMSP			
147	231012Z	27.5N 125.8E	SAT	(IR DATA)	)	PCN 5	DMSP			
148	231130Z	28.0N 127.0E	SAT	(IR DATA)	)	NOAA-2				
149	231227Z	28.0N 126.4E	SAT	(IR DATA)	)	PCN 3	DMSP			
150	231227Z	27.7N 126.1E	SAT	(IR DATA)	)	PCN 5	DMSP			
151	231617Z	27.3N 126.4E	SAT	(IR DATA)	)	PCN 5	DMSP			
152	231617Z	27.3N 126.6E	SAT	(IR DATA)	)	PCN 3	DMSP			
153	231640Z	26.8N 126.6E	LHOR	- POOR FIX, 10 DEG SPIRAL OVERLAY						26.0N 127.8E
154	231800Z	26.7N 126.7E	LHOR	- POOR FIX, 10 DEG SPIRAL OVERLAY						26.0N 127.8E
155	231850Z	26.7N 126.8E	LHOR	- FAIR FIX, POSSIBLY EYE, 10 DEG SPIRAL OVERLAY						26.0N 127.8E
156	232000Z	27.0N 126.6E	LHOR	- 6///						26.0N 127.8E
157	232100Z	27.0N 126.7E	LHOR	- 6///						26.0N 127.8E
158	232113Z	27.0N 127.0E	SAT	(IR DATA)	)	PCN 5	DMSP			26.0N 127.8E
159	232200Z	26.9N 126.9E	LHOR	- 6///						26.0N 127.8E
160	232300Z	26.9N 127.2E	LHOR	- 6///						26.0N 127.8E
161	232327Z	26.8N 127.7E	SAT	(12+5.2+5 / / MHS)	PCN 3	DMSP				
162	232327Z	26.6N 127.3E	SAT	(13+0.3+0 / / 01+5/24MHS)	PCN 1	DMSP				
163	240100Z	26.8N 127.4E	LHOR	- 6///						26.0N 129.5E
164	240105Z	26.7N 127.7E	LHOR	- GOOD FIX, 10 DEG SPIRAL OVERLAY						26.0N 127.8E
165	240133Z	26.3N 127.0E	SAT	(T2+5.2+5 / / 01+0/25MHS)	NOAA-2					
166	240200Z	26.8N 127.4E	LHOR	- 6//7/3						26.0N 129.5E
167	240200Z	26.6N 127.7E	LHOR	- 25/02						26.0N 127.8E
168	240300Z	26.5N 127.8E	LHOR	- 21672						26.0N 127.8E
169	240317Z	26.4N 127.5E	SAT	(IR DATA)	)	PCN 3	DMSP			
170	240317Z	26.6N 128.1E	SAT	(IR DATA)	)	PCN 3	DMSP			
171	240317Z	26.6N 127.7E	SAT	(13+0.3+0 / / MHS)	PCN 3	DMSP				
172	240400Z	26.7N 128.1E	LHOR	- 6///						26.0N 129.5E
173	240400Z	26.3N 128.2E	LHOR	- 5//12						26.0N 127.8E
174	240500Z	26.3N 128.4E	LHOR	- 5///1						26.0N 127.8E
175	240500Z	26.1N 128.6E	LHOR	- 10305						26.0N 129.5E
176	240500Z	26.5N 128.5E	LHOR	- 15 DEG SPIRAL OVERLAY						26.0N 127.8E
177	240555Z	26.3N 128.7E	P	2 5 700 340 25 240 20 30 10 .25 480	291 16 13	CTHC			10	
178	240700Z	26.0N 128.8E	LHOR	- 5///						26.0N 127.8E
179	240710Z	26.3N 128.8E	LHOR	- GOOD FIX, HVY ATTN, 15 DEG SPIRAL OVERLAY						26.0N 127.8E
180	240745Z	26.3N 128.7E	LHOR	- FAIR FIX, 10 DEG SPIRAL OVERLAY						26.0N 127.8E
181	240800Z	26.2N 129.0E	LHOR	- POOR FIX						26.0N 127.7E
182	240810Z	26.2N 129.2E	LHOR	- FAIR FIX, HVY ATTN						26.0N 127.8E
183	240830Z	26.1N 129.2E	P	2 5 700 210 35 160 30 55 190 30 975	290 16 12	CTHC			15	
184	240843Z	26.2N 129.3E	LHOR	- FAIR FIX, HVY ATTN, 10 DEG SPIRAL OVERLAY						26.0N 127.8E
185	240900Z	26.1N 129.4E	LHOR	- 52713						26.0N 129.5E
186	240940Z	26.2N 129.3E	LHOR	- 5///						26.0N 127.8E
187	240941Z	26.2N 129.3E	LHOR	- FAIR FIX, HVY ATTN, 15 DEG SPIRAL OVERLAY						26.0N 127.8E
188	240938Z	26.1N 129.4E	LHOR	- FAIR FIX, HVY ATTN, 20 DEG SPIRAL OVERLAY						26.0N 127.8E
189	240956Z	26.2N 129.4E	SAT	(IR DATA)	)	PCN 4	DMSP			
190	240956Z	25.5N 128.6E	SAT	(IR DATA)	)	PCN 0	DMSP			
191	241000Z	26.0N 129.4E	LHOR	- 6///						26.0N 127.8E
192	241000Z	26.1N 129.3E	LHOR	- POOR FIX						26.0N 127.8E
193	241008Z	26.0N 129.6E	LHOR	- FAIR FIX, HVY ATTN, 15 DEG SPIRAL OVERLAY						26.0N 127.6E
194	241042Z	26.0N 129.6E	LHOR	- FAIR FIX, HVY ATTN, 15 DEG SPIRAL OVERLAY						26.0N 127.6E
195	241108Z	26.1N 129.8E	LHOR	- 50713						26.0N 129.5E
196	241110Z	25.8N 129.8E	LHOR	- FAIR FIX, HVY ATTN, 20 DEG SPIRAL OVERLAY						26.0N 127.8E
197	241113Z	25.9N 129.8E	SAT	(IR DATA)	)	PCN 3	DMSP			
198	241200Z	25.9N 130.4E	SAT	(IR DATA)	)	PCN 3	DMSP			
199	241208Z	26.0N 130.4E	SAT	(IR DATA)	)	PCN 3	DMSP			
200	241208Z	26.3N 129.8E	SAT	(IR DATA)		PCN 3	DMSP			
201	241210Z	25.9N 130.3E	LHOR	- FAIR FIX, HVY ATTN, F.B. DILUTING DIFFUSE AND BREAKING UP						26.0N 127.8E
202	241236Z	25.9N 130.3E	LHOR	- POOR FIX, HVY ATTN, F.B. DIFFUSE, 15 DEG SPIRAL OVERLAY						26.0N 127.8E
203	241300Z	26.0N 130.3E	LHOR	- 6///						26.0N 127.8E
204	241400Z	26.1N 130.5E	LHOR	- 6///						26.0N 127.8E
205	241447Z	25.9N 130.6E	P	2 1 700 220 05 110 20 - - - 475 290 16 13	-	-	-			
206	241500Z	26.1N 130.8E	LHOR	- 6///						26.0N 127.8E
207	241559Z	25.6N 130.6E	SAT	(IR DATA)	)	PCN 3	DMSP			
208	241559Z	26.0N 130.3E	SAT	(IR DATA)	)	PCN 5	DMSP			
209	242000Z	26.3N 131.4E	SAT	(IR DATA)		PCN 5	DMSP			26.0N 129.5E
210	242058Z	26.0N 131.5E	SAT	(14+0.4+0-/D1.0/24MHS)	PCN 5	DMSP				
211	242141Z	26.0N 132.1E	SAT	(1 1 700 300 75 206 22 60 240 10 904	281 19 15	CTHC			25	
212	242308Z	26.3N 132.5E	SAT	(13+0.3+0 /D0.5/24MHS)	PCN 5	DMSP				
213	242308Z	26.0N 132.1E	SAT	(IR DATA)	)	PCN 3	DMSP			
214	250034Z	26.4N 132.6E	SAT	(13.5/3.5 /S /25MHS)	NOAA-2		(CONF 01)			
215	250259Z	27.0N 133.5E	SAT	(IR DATA)	)	PCN 1	DMSP			
216	250259Z	27.1N 133.1E	SAT	(IR DATA)	)	PCN 3	DMSP			
217	250441Z	28.0N 134.7E	SAT	(IR DATA)	)	PCN 6	DMSP			
218	251025Z	29.4N 135.5E	P	5 5 700 280 00 220 60 60 160 110 972 287 19 - - -						
219	251150Z	29.0N 135.6E	SAT	(IR DATA)	)	PCN 4	DMSP			
220	251150Z	29.0N 135.1E	SAT	(IR DATA)	)	PCN 5	DMSP			
221	251500Z	30.0N 135.6E	P	5 5 700 240 00 180 25 - - - 973 288 18 12	EITP SE-NW					
222	251540Z	30.0N 135.6E	SAT	(IR DATA)	)	PCN 5	DMSP			
223	252042Z	32.0N 137.1E	SAT	(13+0.4+0 /W1.0/24MHS)	PCN 5	DMSP				
224	252100Z	33.0N 137.2E	LHOR	- 35/9/2						35.0N 138.7E
225	252200Z	33.0N 137.6E	LHOR	- 35/1/1						35.0N 138.7E
226	252200Z	33.0N 137.1E	LHOR	- 35/9/1						35.0N 138.7E
227	252210Z	33.0N 137.5E	LHOR	- 35/9/1						35.0N 139.4E
228	252250Z	33.0N 137.3E	SAT	(1<0.3+0 /W1.0/24MHS)	PCN 5	DMSP				
229	252250Z	34.0N 137.0E	SAT	(IR DATA)	)	PCN 5	DMSP			
230	252300Z	34.0N 137.4E	LHOR	- 52/1/						35.0N 138.7E
231	252300Z	33.0N 137.3E	LHOR	- 25931						35.0N 138.7E
232	252331Z	34.0N 135.9E	SAT	(12+0.3/5 /W1.5/24MHS)	NOAA-2		(CONF 02)			
233	260020Z	34.0N 138.0E	LHOR	-						
234	260250Z	34.2N 138.4E	SAT	(IR DATA)		PCN 5	DMSP			
235	260120Z	35.2N 138.2E	LHOR	- 75/41						
236	260200Z	35.0N 137.8E	LHOR	- 10971						
237	260230Z	35.0N 138.3E	LHOR	-						
238	260235Z	36.0N 138.2E	LHOR	- POOR FIX, 10 DEG SPIRAL OVERLAY						
239	260240Z	36.0N 138.4E	SAT	(IR DATA)		PCN 5	DMSP			
240	260300Z	36.0N 138.3E	LHOR	-						
241	260413Z	36.0N 138.3E	LHOR	- POOR FIX, 10 DEG SPIRAL OVERLAY						
242	260435Z	36.0N 138.5E	LHOR	- POOR FIX, 15 DEG SPIRAL OVERLAY						
243	260610Z	37.0N 139.1E	LHOR	- POOR FIX, 15 DEG SPIRAL OVERLAY						

TROPICAL DEPRESSION 16  
FIX POSITIONS FOR CYCLONE NO. 16  
0600Z 14 AUG TO 0600Z 15 AUG

IX NO.	TIME	POSTI	FIX CAT	ACCHY NAV-MET	FIX LVL	FLT DIK	LVL VEL	BLG BKG	NGN RNG	MAX OBS SLP	SFC WIND MGT	MAX OBS SLP	OBS MGT	MIN 700MB	LVL T1/T0	EYE FORM	UNIEN- IATION	EYE UIA	MUSIT UP HADAH	MSM NMNH
1	141242Z	16.2N	109.0E	SAT	(IH DATA					I	N0AA-2									
2	150030Z	16.8N	107.8E	SAT	(12.5/2.5-/DL5/24HRS)	PCN S	UMSP													
3	150030Z	16.9N	107.7E	SAT	(12.0/2.0 / / HRS)	PCN S	UMSP													
♦	150423Z	16.6N	107.0E	SAT	(IH DATA					I	PCN S	UMSP								

TROPICAL STORM WADINE  
FIX POSITIONS FOR CYCLONE NO. 17  
0600Z 15 AUG TO 1200Z 18 AUG

NO.	TIME	POSIT	CAT	MAX OBS			MAX UHS			OBS	MIN	FLT	POSIT				
				ACCHY	LVL	FLT	LVL	WIND	SFC					ORIENT	EYE	OF	
				DIK	DIR	BKG	RNG	VEL	GHO	RNG	SLP	MGT	TI/TO	FORM	ORIEN-	DIA	MSN
1	150030Z	16.3N 127.1E	SAT	(12.0/2.0	/					PCN 5	UMSP						
2	150102Z	16.3N 126.8E	SAT	(11.5/1.5	/D0.5/24HNS)					NUAA-2		(CONF 02)					
3	150241Z	16.3N 127.1E	SAT	(1K DATA						PCN 5	DMSP						
4	151144Z	16.3N 131.0E	SAT	(1K DATA						NOAA-2		(CONF 02)					
5	151430Z	15.6N 131.6E	P	10 20	700	350	35	270	30	-	-	997	303	10 10	-	-	1
6	151523Z	15.5N 131.5E	SAT	(1K DATA						PCN 5	DMSP						
7	151523Z	15.6N 131.6E	SAT	(1K DATA						PCN 5	DMSP						
8	152134Z	15.5N 134.8E	SAT	(1K DATA						PCN 3	DMSP						
9	152329Z	15.6N 135.5E	P	2 5	700	300	55	250	90	60	140	30	482	295	10 14	-	-
10	160011Z	15.8N 135.6E	SAT	(13.0/3.0	/D1.0/24HNS)					PCN 3	DMSP						
11	160011Z	15.8N 135.9E	SAT	(13.0/3.0	/					PCN 3	DMSP						
12	160223Z	16.0N 136.3E	SAT	(1K DATA						PCN 3	DMSP						
13	160223Z	15.9N 136.5E	SAT	(13.0/3.0	/					PCN 3	DMSP						
14	160240Z	16.3N 136.5E	P	1 4	700	260	50	160	35	55	140	70	985	296	14 11	-	-
15	160825Z	17.3N 138.4E	P	10 2	1500	220	45	130	100	4	130	60	988	-	25 23	-	-
16	161018Z	17.6N 138.9E	SAT	(1K DATA						PCN 6	UMSP						
17	161046Z	18.0N 139.0E	SAT	(1K DATA						NOAA-2							
18	161111Z	17.7N 138.8E	SAT	(1K DATA						PCN 5	DMSP						
19	161111Z	17.6N 138.6E	SAT	(1K DATA						PCN 6	DMSP						
20	161436Z	18.6N 140.3E	P	10 5	700	220	40	140	70	-	-	996	304	13 11	-	-	3
21	161504Z	18.8N 139.9E	SAT	(1K DATA						PCN 5	DMSP						
22	161504Z	18.2N 139.1E	SAT	(1K DATA						PCN 6	DMSP						
23	162211Z	20.9N 141.5E	SAT	(13.5/3.5	/D0.5/24HNS)					PCN 3	DMSP						
24	162211Z	20.9N 141.2E	SAT	(11.5/2.5	/W1.5/24HNS)					PCN 4	DMSP						
25	170204Z	22.3N 141.8E	SAT	(1K DATA						PCN 3	DMSP						
26	170204Z	21.7N 141.3E	SAT	(1K DATA						PCN 3	DMSP						
27	170325Z	22.3N 141.6E	P	5 5	700	180	50	90	18	85	30	10	990	302	17 12	-	-
28	171002Z	23.8N 141.1E	SAT	(1K DATA						PCN 6	DMSP						*
29	171053Z	23.7N 141.3E	SAT	(1K DATA						PCN 6	DMSP						
30	171053Z	23.9N 140.3E	SAT	(1K DATA						PCN 6	DMSP						
31	171446Z	24.2N 141.0E	SAT	(1K DATA						PCN 5	DMSP						
32	171446Z	24.2N 140.6E	SAT	(1K DATA						PCN 3	DMSP						
33	172104Z	29.1N 140.6E	SAT	(1K DATA						PCN 3	DMSP						
34	172153Z	29.3N 140.7E	SAT	(12.5/3.5	/W1.0/24HNS)					PCN 3	DMSP						
35	172153Z	29.3N 140.7E	SAT	(12.5/2.5	/D1.0/24HNS)					PCN 3	DMSP						
36	172335Z	29.9N 140.4E	SAT	(1K DATA						PCN 3	DMSP						
37	172355Z	30.0N 139.8E	SAT	(1K DATA						PCN 3	DMSP						
38	180146Z	30.6N 140.1E	SAT	(1K DATA						PCN 3	DMSP						
39	180146Z	30.7N 140.5E	SAT	(1K DATA						PCN 3	DMSP						
40	180520Z	30.8N 139.8E	P	5 5	500	200	40	250	120	25	360	40	1002	-	24	-	-
41	180947Z	32.2N 136.9E	SAT	(1K DATA						PCN 6	UMSP						
42	181216Z	32.6N 136.4E	SAT	(1K DATA						PCN 6	UMSP						
43	182316Z	32.2N 137.2E	SAT	(1K DATA						PCN 3	UMSP						

TYPHOON POLLY  
FIX POSITIONS FOR CYCLONE NO. 19  
1200Z 25 AUG TO 0000Z 02 SEP

TYPHOON POLLY  
FIX POSITIONS FOR CYCLONE NO. 19  
1200Z 25 AUG TO 0000Z 02 SEP

FIX NO.	TIME	POSII	FIX ACCY	FIX	FLT	LVL	WIND	SFL	WIND	MIN	VWMB	LVL	EYE	ORIENT	TYPE	PUSIT	UF	MSN	
		CAT	NAV-MET	LVL	DIR	VEL	BRG	RNG	VEL	BHG	RNG	SLP	HGT	TILT	FORM	STATION	UFAK	NBBM	
33	201132Z	15.0N	147.2E	SAT	(IR DATA				) PCN 3	DMS									
34	201132Z	15.0N	147.3E	SAT	(IR DATA				) PCN 3	DMS									
35	201340Z	15.0N	147.1E	SAT	(IR DATA				) PCN 6	DMS									
36	201700Z	15.0N	146.3E	P	5	5	700	320	32	240	40	-	-	991	299	12	-	-	
37	202040Z	16.0N	146.0E	SAT	(IR DATA				) PCN 3	DMS									
38	202050Z	16.0N	146.2E	P	1	2	700	320	40	240	30	3	290	30	989	299	14	11	
39	202232Z	16.0N	146.0E	SAT	(14.0/4.0 /01.5/24HRS)				PCN 3	DMS									
40	202232Z	15.0N	146.2E	SAT	(14.0/4.0 /02.0/24HRS)				PCN 3	DMS									
41	210015Z	16.0N	146.0E	P	-	-	700	-	60	-	60	-	-	-	298	-	-	-	
42	210222Z	16.0N	146.2E	SAT	(IR DATA				) PCN 1	DMS									
43	210222Z	16.0N	145.6E	SAT	(IR DATA				) PCN 4	DMS									
44	210245Z	16.0N	145.7E	P	1	2	700	280	50	200	30	45	310	30	981	298	14	12	
45	210840Z	16.0N	145.5E	P	1	2	700	170	75	120	50	65	120	60	977	298	16	12	
46	210845Z	17.0N	145.4E	P	10	3	700	10	70	270	100	35	270	100	976	289	16	12	
47	210910Z	17.0N	144.9E	SAT	(IR DATA				) PCN 4	DMS									
48	211113Z	17.0N	145.0E	SAT	(IR DATA				) PCN 3	DMS									
49	211113Z	18.0N	144.8E	SAT	(IR DATA				) PCN 3	DMS									
50	211503Z	18.0N	144.9E	SAT	(IR DATA				) PCN 3	DMS									
51	212100Z	19.0N	143.3E	AU H													19.0N 143.3E	-	
52	212159Z	19.0N	143.7E	P	2	2	700	260	60	180	39	3	180	90	964	279	14	13	
53	212213Z	19.0N	143.9E	SAT	(15.0/5.0 /01.0/24HRS)				PCN 1	DMS								30	
54	212213Z	19.0N	143.2E	SAT	(15.0/5.0 /01.0/24HRS)				PCN 1	DMS									
55	212331Z	19.0N	143.0E	SAT	(15.0/5.0 /00.5/23HRS)				NOAA-2										
56	212032Z	20.0N	142.8E	SAT	(IR DATA				) PCN 1	DMS									
57	210311Z	20.0N	142.9E	P	5	2	700	190	80	90	50	100	90	20	959	275	17	13	
58	210362Z	21.0N	142.1E	SAT	(IR DATA				) PCN 2	DMS									
59	210362Z	22.0N	142.7E	SAT	(IR DATA				) PCN 2	DMS									
60	210552Z	21.0N	142.0E	SAT	(IR DATA				) PCN 1	DMS									
61	210552Z	21.0N	141.8E	SAT	(IR DATA				) PCN 2	DMS									
62	210123Z	22.0N	142.0E	SAT	(IR DATA				) NOAA-2										
63	210123Z	22.0N	141.5E	P	5	2	700	270	105	170	35	-	-	-	948	264	18	13	
64	210444Z	22.0N	141.3E	SAT	(IR DATA				) PCN 1	DMS									
65	210138Z	23.0N	141.6E	SAT	(IR DATA				) PCN 1	DMS									
66	210138Z	23.0N	141.3E	SAT	(16.5/5.5 /01.0/24HRS)				PCN 1	DMS									
67	210237Z	23.0N	141.3E	SAT	(15.5/5.5 /50.5/25HRS)				PCN 1	DMS									
68	210237Z	23.0N	141.2E	SAT	(IR DATA				) PCN 1	DMS									
69	210145Z	23.0N	140.3E	SAT	(IR DATA				) PCN 1	DMS									
70	210537Z	25.0N	141.1E	P	2	2	700	280	80	150	50	100	150	50	950	266	17	11	
71	210904Z	25.0N	141.3E	P	2	5	700	270	80	250	40	80	250	40	952	267	17	11	
72	211014Z	25.0N	141.1E	SAT	(IR DATA				) PCN 2	DMS									
73	210212Z	25.0N	141.2E	SAT	(IR DATA				) PCN 4	DMS									
74	211114Z	26.0N	141.0E	SAT	(IR DATA				) NOAA-2										
75	210218Z	26.0N	141.1E	SAT	(IR DATA				) PCN 1	DMS									
76	210218Z	26.0N	141.4E	SAT	(IR DATA				) PCN 1	DMS									
77	210426Z	26.0N	141.2E	SAT	(IR DATA				) PCN 1	DMS									
78	210352Z	27.0N	140.7E	P	3	3	700	260	85	180	45	-	-	-	954	269	15	12	
79	210404Z	27.0N	140.6E	P	3	4	700	70	85	360	40	-	-	-	955	270	15	13	
80	210222Z	28.0N	140.5E	SAT	(IR DATA				) PCN 2	DMS									
81	210231Z	28.0N	140.1E	SAT	(14.5/5.5 /W1.0/24HRS)				PCN 1	DMS									
82	210231Z	28.0N	140.2E	SAT	(14.0/5.5 /D0.5/20HRS)				PCN 1	DMS									
83	301126Z	28.0N	139.9E	SAT	(IR DATA				) PCN 1	DMS									
84	300440Z	29.0N	139.6E	P	5	5	700	330	65	270	30	73	360	15	960	274	14	13	
85	300530Z	29.0N	139.3E	P	5	5	700	360	40	300	10	60	200	40	959	273	14	13	
86	301200Z	30.0N	138.7E	SAT	(IR DATA				) PCN 1	DMS									
87	301204Z	30.0N	137.7E	P	5	5	700	340	70	240	25	-	-	-	954	271	17	14	
88	302100Z	30.0N	137.2E	LHM	-	2	/1/3												
89	302128Z	30.0N	137.2E	P	5	3	700	40	75	310	30	60	310	17	956	271	15	14	
90	302200Z	30.0N	137.1E	LHM	-	2	/1/4												
91	302300Z	30.0N	137.0E	SAT	(13.5/4.5 /W1.0/24HRS)				PCN 1	DMS									
92	302300Z	30.0N	136.7E	SAT	(14.5/5.5 /W2.0/24HRS)				PCN 1	DMS									
93	302300Z	30.0N	137.0E	LHM	-	2	/1/4												
94	310000Z	30.0N	136.9E	SAT	(IR DATA				) PCN 1	DMS									
95	310100Z	30.0N	136.7E	SAT	(IR DATA				) PCN 1	DMS									
96	310200Z	30.0N	136.5E	LHM	-	5	/1/3												
97	310230Z	30.0N	136.3E	P	3	3	700	320	80	200	30	70	200	40	-	-	15	12	
98	310249Z	31.0N	136.9E	SAT	(IR DATA				) PCN 1	DMS									
99	310300Z	30.0N	136.2E	LHM	-	5	/1/4												
100	310300Z	30.0N	136.0E	LHM	-	5	/1/3												
101	310400Z	30.0N	136.0E	P	-	-	700	10	85	270	35	-	-	-	-	14	CTHC	20	
102	310400Z	30.0N	135.8E	LHM	-														
103	310400Z	31.0N	136.1E	LHM	-	5	/1/3												
104	310400Z	30.0N	135.9E	SAT	(IR DATA				) PCN 1	DMS									
105	310500Z	30.0N	135.7E	LHM	-	5	/1/4												
106	310500Z	30.0N	135.8E	LHM	-	5	/1/4												
107	310500Z	30.0N	135.8E	LHM	-	5	/1/5												
108	310500Z	30.0N	135.6E	LHM	-	5	/1/5												
109	310522Z	30.0N	135.3E	P	5	7	700	350	75	230	50	60	300	30	950	266	17	14	
110	311000Z	30.0N	135.3E	LHM	-	10	/1/1												
111	311100Z	30.0N	135.2E	LHM	-	11	/1/1												
112	311142Z	30.0N	134.8E	SAT	(IR DATA				) PCN 1	DMS									
113	311142Z	30.0N	134.8E	SAT	(IR DATA				) PCN 1	DMS									
114	311400Z	30.0N	134.0E	LHM	-	25/11													
115	311400Z	31.0N	134.5E	LHM	-	60/11													
116	311500Z	31.0N	134.5E																

TYPHOON POLLY  
FIX POSITIONS FOR CYCLONE NO. 19  
1200Z 25 AUG TO 0600Z 02 SEP

FIX NO.	TIME	POSIT	FIX ACCRY	FIX CAT	MAX DBS	MAX OBS	OBS	MIN	FLT	POSIT OF RADAR	MSN NNMR
				CAT NAV-MET	FLT LVL	SFC WIND	MIN 700MB	LVL	EYE	ORIENT-	EYE
					DIR VEL	BHG RNG	SLP	MGT	TI/T0	FORM	TATION
130	312100Z	31.3N 133.8E	LDRH	- 25/12						33.3N 134+2E	
131	312200Z	31.2N 133.6E	LDRH	- 0//22						30.6N 131+0E	
132	312200Z	31.4N 133.7E	LDRH	- 25/12						33.3N 134+2E	
133	312242Z	31.6N 133.7E	SAT	(15.0/5.0- /W1.5/24HRS)	PCN 1	DMSP					
134	312242Z	31.7N 133.8E	SAT	(13.5/4.5 /W1.0/24HRS)	PCN 1	DMSP					
135	312300Z	31.5N 133.8E	LDRH	- GOOD FIX						33.6N 130+5E	
136	312300Z	31.3N 133.5E	LDRH	- 0//22						30.6N 131+0E	
137	312300Z	31.5N 133.7E	LDRH	- 10/12						33.3N 134+2E	
138	010000Z	31.5N 133.6E	LDRH	- 0//22						30.6N 131+0E	
139	010000Z	31.6N 133.7E	LDRH	- GOOD FIX, 70 KM DIA						33.6N 130+5E	
140	010100Z	31.7N 133.7E	LDRH	- GOOD FIX, 70 KM DIA						33.6N 130+5E	
141	010100Z	31.6N 133.7E	LDRH	- 62902						30.6N 131+0E	
142	010100Z	31.8N 133.5E	LDRH	- 10912						33.3N 134+2E	
143	010200Z	31.9N 133.4E	LDRH	- 10/22						33.3N 134+2E	
144	010200Z	31.8N 133.6E	LDRH	- 32912						30.6N 131+0E	
145	010200Z	31.8N 133.6E	LDRH	- GOOD FIX, 70 KM DIA						33.6N 130+5E	
146	010230Z	32.2N 133.6E	SAT	(IR DATA )	PCN 1	DMSP					
147	010300Z	31.9N 133.5E	LDRH	- 21912						30.6N 131+0E	
148	010300Z	31.9N 133.6E	LDRH	- GOOD FIX, 70 KM DIA						33.6N 130+5E	
149	010400Z	32.1N 133.5E	LDRH	- 21912						30.6N 131+0E	
150	010400Z	32.0N 133.5E	LDRH	- GOOD FIX, 70 KM DIA						33.6N 130+5E	
151	010400Z	32.0N 133.3E	LDRH	- 15//2						33.3N 134+2E	
152	010500Z	32.3N 133.6E	LDRH	- 20/22						30.6N 131+0E	
153	010500Z	32.3N 133.5E	LDRH	- GOOD FIX, 70 KM DIA						33.6N 130+5E	
154	010600Z	32.4N 133.6E	LDRH	- 55942						30.6N 131+0E	
155	010600Z	32.3N 133.2E	LDRH	- 65//4						34.3N 132+0E	
156	010700Z	32.0N 133.5E	LDRH	- GOOD FIX, 80 KM DIA						33.6N 130+5E	
157	010700Z	32.0N 133.6E	LDRH	- 21912						30.6N 131+0E	
158	010700Z	32.7N 133.4E	LDRH	- 1///2						33.3N 134+2E	
159	010700Z	32.0N 133.2E	LDRH	- 1///2						34.3N 132+0E	
160	010800Z	33.0N 133.3E	LDRH	- 65//4						33.3N 134+2E	
161	010800Z	33.0N 133.4E	LDRH	- GOOD FIX, 80 KM DIA						33.6N 130+5E	
162	010800Z	33.0N 133.4E	LDRH	- 51911						30.6N 131+0E	
163	010900Z	33.3N 133.3E	LDRH	- 20//3						35.5N 133+1E	
164	010900Z	33.2N 133.3E	LDRH	- 1///2						33.3N 134+2E	
165	010900Z	33.2N 133.4E	LDRH	- GOOD FIX, 60 KM DIA						33.6N 130+5E	
166	011000Z	33.6N 133.0E	LDRH	- GOOD FIX, 30 KM DIA						33.3N 134+2E	
167	011000Z	33.8N 133.2E	LDRH	- 2///2						34.3N 132+0E	
168	011000Z	33.6N 133.1E	LDRH	- 65//5						35.5N 133+1E	
169	011020Z	33.4N 133.3E	LDRH	- 20//3						33.6N 130+5E	
170	011100Z	33.8N 133.1E	LDRH	- 20//3						35.5N 133+1E	
171	011124Z	33.7N 132.9E	SAT	(IR DATA )	PCN 5	DMSP					
172	011124Z	33.8N 133.3E	SAT	(IR DATA )	PCN 5	DMSP					
173	011124Z	33.7N 133.1E	LDRH	- POOR FIX						33.6N 130+5E	
174	011200Z	34.3N 133.2E	LDRH	- 20202						35.5N 133+1E	
175	011200Z	34.2N 133.0E	LDRH	- POOR FIX						33.6N 130+5E	
176	011300Z	34.5N 132.8E	LDRH	- 20312						35.5N 133+1E	
177	011300Z	34.5N 132.8E	LDRH	- 65//2						34.3N 132+0E	
178	011300Z	34.6N 132.8E	LDRH	- POOR FIX						33.6N 130+5E	
179	011305Z	34.2N 132.7E	SAT	(IR DATA )	PCN 5	DMSP					
180	011345Z	34.7N 132.6E	LDRH	- POOR FIX, 20 KM DIA						34.7N 134+9E	
181	011400Z	34.7N 132.6E	LDRH	- 20342						35.5N 133+1E	
182	011400Z	34.7N 132.6E	LDRH	- POOR FIX						33.6N 130+5E	
183	011400Z	35.0N 132.6E	LDRH	- 65//1						34.3N 132+0E	
184	011445Z	34.9N 132.5E	LDRH	- POOR FIX, 15 KM DIA						34.7N 134+9E	
185	011500Z	35.3N 132.6E	LDRH	- 20312						35.5N 133+1E	
186	011500Z	35.5N 132.6E	LDRH	- 21032						34.3N 132+0E	
187	011500Z	35.5N 132.5E	LDRH	- POOR FIX						33.6N 130+5E	
188	011512Z	35.2N 132.3E	SAT	(IR DATA )	PCN 5	DMSP					
189	011545Z	35.2N 132.4E	LDRH	- POOR FIX, 15 KM DIA						34.7N 134+9E	
190	011600Z	35.7N 132.5E	LDRH	- 20152						35.5N 133+1E	
191	011600Z	36.0N 132.4E	LDRH	- 21832						34.3N 132+0E	
192	011600Z	35.6N 132.3E	LDRH	- POOR FIX						33.6N 130+5E	
193	011645Z	35.6N 132.2E	LDRH	- POOR FIX, 15 KM DIA						34.7N 134+9E	
194	011700Z	35.9N 132.3E	LDRH	- 20112						35.5N 133+1E	
195	011700Z	36.2N 132.2E	LDRH	- POOR FIX						33.6N 130+5E	
196	012000Z	36.3N 131.6E	LDRH	-							
197	012242Z	37.5N 132.4E	SAT	(13.0/4.0 /W2.0/24HRS)	PCN 3	DMSP					
198	012242Z	37.6N 132.5E	SAT	(12.0/3.0 /W1.5/24HRS)	PCN 3	DMSP					
199	020005Z	37.6N 132.7E	SAT	(IR DATA )	PCN 3	DMSP					
200	020010Z	37.1N 132.0E	SAT	(13.0/4.5 /W1.5/24HRS)	NOAA-2	(CONF 02)					
201	021247Z	41.0N 132.7E	SAT	(IR DATA )	PCN 5	DMSP					

TROPICAL DEPRESSION 20  
FIX POSITIONS FOR CYCLONE NO. 20  
0000Z 27 AUG TO 0600Z 28 AUG

FIX NO.	TIME	POSIT	FIX ACCRY	FIX CAT	MAX DBS	MAX OBS	OBS	MIN	FLT	POSIT OF RADAR	MSN NNMR
			CAT NAV-MET	LVL	DIR VEL	BHG RNG	VEL	700MB	LVL	EYE	ORIENT- RADAR
							SLP	MGT	TI/T0	FORM	TATION
1	252224Z	22.7N 127.4E	SAT	(T1.0/1.0 / / HRS)	PCN 5	DMSP					
2	260240Z	23.2N 126.5E	SAT	(IR DATA )	PCN 5	DMSP					
3	261107Z	24.8N 128.2E	SAT	(IR DATA )	PCN 6	DMSP					
4	270013Z	24.7N 131.3E	SAT	(T2.0/2.0 / / HRS)	PCN 3	DMSP					
5	270222Z	24.9N 131.6E	SAT	(IR DATA )	PCN 3	DMSP					
6	270222Z	25.2N 131.5E	SAT	(T2.0/2.0 / / HRS)	PCN 4	DMSP					
7	271051Z	25.0N 131.6E	SAT	(IR DATA )	PCN 5	DMSP					
8	271052Z	25.0N 131.8E	SAT	(IR DATA )	PCN 6	DMSP					
9	271255Z	26.0N 131.0E	SAT	(IR DATA )	PCN 3	DMSP					
10	271255Z	26.2N 130.9E	SAT	(IR DATA )	PCN 6	DMSP					
11	271503Z	26.2N 130.8E	SAT	(IR DATA )	PCN 5	DMSP					
12	272153Z	26.5N 129.7E	SAT	(T1.5/2.0 / / HRS)	PCN 3	DMSP					
13	272355Z	27.0N 129.5E	SAT	(IR DATA )	PCN 3	DMSP					
14	272355Z	27.2N 129.7E	SAT	(T1.0/2.0 / / HRS)	PCN 5	DMSP					
15	280203Z	27.4N 128.9E	SAT	(IR DATA )	PCN 3	DMSP					
16	280430Z	27.1N 128.7E	P	2 8 1500 80 20 90 25 20 110 30 994 - 25 64 - - -							1
17	281237Z	28.0N 126.9E	SAT	(IR DATA )	PCN 3	DMSP					

TROPICAL STORM ROSE  
FIX POSITIONS FOR CYCLONE NO. 21  
0600Z 28 AUG TO 0600Z 31 AUG

FIX NO.	TIME	POSII	FIX CAT	ACLHY	/FIX	MAX OBS LVL	MAX OBS DIR	SFC WIND VEL	OBS	MIN	FLT	PUSIT OF
			NAV-MET	LVL	LVL	BKG RNG	VEL	BKG RNG	SLP	700MB	LVL	MSN
									HGT	T1/T0	EYE	NMBR
1	271532	22.5N 122.5E	SAT	(11.0/1.0 /	/	HRS)	PCN 5	DMSP				
2	272355Z	23.0N 122.5E	SAT	(IR DATA	)		PCN 5	DMSP				
3	272355Z	23.0N 122.1E	SAT	(12.0/2.0 /	/	(HRS)	PCN 5	DMSP				
4	280100Z	22.0N 123.9E	LDRK	-	6//12							
5	280125Z	23.1N 123.1E	SAT	(12.0/2.0 /	01.0/24HRS)		NOAA-2		(CONF 01)			
6	280300Z	22.7N 124.0E	LDRK	-	6//12							
7	280300Z	23.0N 124.1E	LDRK	-	6//12							
8	280400Z	22.9N 124.4E	LDRK	-	6//12							
9	280400Z	22.7N 124.2E	LDRK	-	6//12							
10	280500Z	22.8N 124.8E	LDRK	-	6//12							
11	280600Z	23.0N 124.9E	P	2	2	700	110	30	350	35	3	3-0
12	280800Z	22.8N 125.5E	LDRK	-	6//13							
13	280900Z	23.1N 125.7E	P	2	3	700	290	50	200	40	40	4-0
14	281000Z	23.2N 125.9E	LDRK	-	6//13							
15	281000Z	23.1N 125.9E	LDRK	-	6//13							
16	281036Z	23.1N 125.0E	SAT	(IR DATA	)		PCN 6	DMSP				
17	281036Z	23.3N 125.8E	SAT	(IR DATA	)		PCN 6	DMSP				
18	281100Z	23.3N 125.9E	LDRK	-	6//13							
19	281100Z	23.2N 126.2E	LDRK	-	6//12							
20	281200Z	23.4N 126.3E	LDRK	-	6//12							
21	281200Z	23.3N 126.2E	LDRK	-	6//12							
22	281213Z	24.0N 126.0E	SAT	(IR DATA	)		NUAA-2		(CONF 02)			
23	281237Z	23.2N 126.5E	SAT	(IR DATA	)		PCN 3	DMSP				
24	281237Z	23.1N 126.7E	SAT	(IR DATA	)		PCN 3	DMSP				
25	281300Z	23.5N 126.4E	LDRK	-	6//11							
26	281300Z	23.4N 126.5E	LDRK	-	6//11							
27	281400Z	23.6N 126.5E	LDRK	-	6//10							
28	281400Z	23.4N 126.7E	LDRK	-	6//11							
29	281500Z	23.6N 126.8E	LDRK	-	6//12							
30	281550Z	23.9N 126.8E	P	5	30	700	190	45	120	30	-	-
31	281600Z	23.7N 127.0E	LDRK	-	6//12							
32	281700Z	23.7N 127.1E	LDRK	-	6//12							
33	281800Z	23.9N 127.3E	LDRK	-	6//12							
34	281900Z	23.9N 127.4E	LDRK	-	6//13							
35	281900Z	24.0N 127.6E	LDRK	-	5//11							
36	282130Z	24.5N 127.7E	P	10	10	700	270	30	180	40	40	4-0
37	282138Z	24.3N 127.4E	SAT	(IR DATA	)		PCN 3	DMSP				
38	282337Z	24.3N 127.5E	SAT	(11.0/1.0 /	05 /24HRS)		PCN 3	DMSP				
39	282337Z	24.4N 128.1E	SAT	(11.5/2.0 /	00.5/24HRS)		PCN 5	DMSP				
40	290000Z	24.5N 128.2E	LDRK	-	55//1							
41	290145Z	24.4N 128.2E	LDRK	-	FAIR FIX, 20 DEG SPIRAL OVERLAY							
42	290200Z	24.8N 128.3E	LDRK	-	5//11							
43	290210Z	25.0N 128.2E	LDRK	-	FAIR FIX, 10 DEG SPIRAL OVERLAY							
44	290310Z	25.4N 128.2E	LDRK	-	FAIR FIX, 10 DEG SPIRAL OVERLAY							
45	290340Z	25.0N 128.4E	LDRK	-	FAIR FIX, 10 DEG SPIRAL OVERLAY							
46	290400Z	25.0N 128.2E	LDRK	-	FAIR FIX, 10 DEG SPIRAL OVERLAY							
47	290442Z	25.5N 128.4E	LDRK	-	FAIR FIX, 10 DEG SPIRAL OVERLAY							
48	290500Z	25.2N 128.0E	LDRK	-	5//11							
49	290510Z	25.8N 128.3E	LDRK	-	FAIR FIX, 10 DEG SPIRAL OVERLAY							
50	290540Z	25.2N 128.5E	P	2	5	700	230	45	130	30	50	14-0
51	290542Z	25.8N 128.3E	LDRK	-	FAIR FIX, 10 DEG SPIRAL OVERLAY							
52	290545Z	25.3N 128.9E	LDRK	-	POOR FIX							
53	290700Z	25.5N 128.7E	LDRK	-	5//11							
54	290710Z	25.5N 128.7E	LDRK	-	FAIR FIX							
55	290745Z	25.8N 128.8E	LDRK	-	FAIR FIX, 15 DEG SPIRAL OVERLAY							
56	290800Z	25.7N 128.8E	LDRK	-	5//11							
57	290810Z	25.7N 128.3E	LDRK	-	FAIR FIX, 15 DEG SPIRAL OVERLAY							
58	290840Z	25.7N 128.4E	LDRK	-	POOR FIX							
59	290844Z	25.8N 128.9E	LDRK	-	FAIR FIX, 15 DEG SPIRAL OVERLAY							
60	290900Z	25.7N 128.8E	LDRK	-	5//11							
61	290900Z	25.7N 129.0E	LDRK	-	POOR FIX							
62	290910Z	25.8N 128.8E	LDRK	-	FAIR FIX, 15 DEG SPIRAL OVERLAY							
63	290911Z	25.6N 128.8E	P	2	5	700	240	25	120	25	25	985
64	290940Z	25.8N 128.1E	LDRK	-	FAIR FIX, HVY ATTN, 15 DEG SPIRAL OVERLAY							
65	291000Z	25.9N 128.8E	LDRK	-	5//11							
66	291000Z	25.0N 128.9E	LDRK	-	55//							
67	291000Z	25.8N 129.0E	LDRK	-	GOOD FIX, 15 DEG SPIRAL OVERLAY							
68	291010Z	25.9N 129.0E	LDRK	-	POOR FIX							
69	291012Z	26.0N 128.8E	SAT	(IR DATA	)		PCN 4	UMSP				
70	291040Z	26.0N 128.8E	SAT	(IR DATA	)		PCN 4	UMSP				
71	291040Z	26.0N 128.8E	LDRK	-	FAIR FIX, 15 DEG SPIRAL OVERLAY							
72	291100Z	26.1N 129.0E	LDRK	-	5//11							
73	291100Z	26.1N 128.9E	LDRK	-	5//11							
74	291132Z	25.8N 128.8E	SAT	(IR DATA	)		NUAA-2		(CONF 02)			
75	291140Z	26.3N 129.1E	LDRK	-	FAIR FIX, 15 DEG SPIRAL OVERLAY							
76	291200Z	26.3N 128.9E	LDRK	-	5//11							
77	291200Z	26.3N 128.9E	LDRK	-	65//6							
78	291200Z	25.0N 129.1E	LDRK	-	FAIR FIX, 15 DEG SPIRAL OVERLAY							
79	291210Z	26.1N 129.1E	LDRK	-	POOR FIX							
80	291218Z	26.3N 128.9E	SAT	(IR DATA	)		PCN 3	UMSP				
81	291218Z	26.4N 129.1E	SAT	(IR DATA	)		PCN 5	UMSP				
82	291245Z	26.2N 129.1E	LDRK	-	FAIR FIX, 15 DEG SPIRAL OVERLAY							
83	291300Z	25.4N 128.9E	LDRK	-	5//11							
84	291300Z	26.4N 129.0E	LDRK	-	55//							
85	291309Z	26.4N 129.1E	LDRK	-	FAIR FIX, 15 DEG SPIRAL OVERLAY							
86	291340Z	26.5N 129.1E	LDRK	-	FAIR FIX, 15 DEG SPIRAL OVERLAY							
87	291400Z	26.5N 129.0E	LDRK	-	55//							
88	291400Z	26.5N 129.0E	LDRK	-	55//							
89	291400Z	26.5N 129.0E	LDRK	-	55//							
90	291409Z	26.5N 129.0E	LDRK	-	FAIR FIX, 20 DEG SPIRAL OVERLAY							
91	291447Z	26.5N 129.0E	LDRK	-	FAIR FIX, 20 DEG SPIRAL OVERLAY							
92	291500Z	26.6N 128.8E	LDRK	-	55//1							
93	291500Z	26.5N 128.8E	LDRK	-	55//							
94	291503Z	26.7N 128.9E	LDRK	-	FAIR FIX, 15 DEG SPIRAL OVERLAY							
95	291543Z	26.7N 128.9E	LDRK	-	FAIR FIX, 15 DEG SPIRAL OVERLAY							
96	291600Z	26.6N 128.8E	LDRK	-	POOR FIX							
97	291600Z	26.7N 128.7E	LDRK	-	55//							
98	291605Z	26.7N 128.9E	LDRK	-	FAIR FIX, 15 DEG SPIRAL OVERLAY							
99	291606Z	26.7N 128.5E	LDRK	-	FAIR FIX							
100	291700Z	26.9N 128.7E	LDRK	-	55//							

TROPICAL STORM ROSE  
FIX POSITIONS FOR CYCLONE NO. 21  
0600Z 28 AUG TO 0600Z 31 AUG

FIX NO.	TIME	POSIT	FIX CAT	ACQ/HY	FIX NAV-MET	MAX OBS LVL	MAX OBS DIR	MAX OBS BRG	MAX OBS RNG	MIN SLP	MIN WIND	FLT HGT	EYE TI/TO	ORIENTATION	EYE FORM	PUSIT UP DIA	MSN NMBR		
101	291700Z	26.9N 128.7E	LHDH	-	5///											26.1N 127.8E			
102	291705Z	26.8N 128.8E	LHDH	-	FAIR FIX, 10 DEG SPIRAL OVERLAY											26.4N 127.8E			
103	291730Z	26.8N 128.7E	LHDH	-	POOR FIX											26.2N 127.7E			
104	291737Z	26.8N 128.8E	LHDH	-	FAIR FIX, 15 DEG SPIRAL OVERLAY											26.4N 127.8E			
105	291800Z	26.8N 128.8E	LHDH	-	55///											26.4N 129.5E			
106	291805Z	26.8N 128.8E	LHDH	-	FAIR FIX, 20 DEG SPIRAL OVERLAY											26.4N 127.8E			
107	291844Z	26.9N 128.8E	LHDH	-	FAIR FIX, 20 DEG SPIRAL OVERLAY											26.4N 127.8E			
108	291900Z	27.0N 128.8E	LHDH	-	55///											26.4N 129.5E			
109	291902Z	27.0N 128.8E	LHDH	-	5///											26.4N 127.8E			
110	292002Z	27.1N 128.8E	LHDH	-	5///											26.4N 127.8E			
111	292110Z	26.9N 128.8E	LHDH	-	FAIR FIX, 10 DEG SPIRAL OVERLAY											26.4N 127.8E			
112	292122Z	27.1N 128.8E	SAT	(1H DATA )						PCN 4 DMSP									
113	292139Z	27.0N 128.8E	LHDH	-	POOR FIX, 10 DEG SPIRAL OVERLAY											26.4N 127.8E			
114	292141Z	27.0N 128.8E	LHDH	-	FAIR FIX, 10 DEG SPIRAL OVERLAY											26.4N 127.8E			
115	292210Z	27.0N 128.8E	LHDH	-	POOR FIX, 10 DEG SPIRAL OVERLAY											26.4N 127.8E			
116	292238Z	26.9N 128.8E	LHDH	-	POOR FIX, 10 DEG SPIRAL OVERLAY											26.4N 127.8E			
117	292308Z	27.0N 128.8E	LHDH	-	POOR FIX, 10 DEG SPIRAL OVERLAY											26.4N 127.8E			
118	292318Z	27.2N 128.8E	SAT	(12.0/2.0 /D1.0/24MHS)						PCN 5 DMSP									
119	292318Z	27.1N 128.8E	SAT	(12.0/2.0 /D0.5/24MHS)						PCN 5 DMSP									
120	292340Z	27.0N 128.8E	LHDH	-	POOR FIX, 20 DEG SPIRAL OVERLAY											26.4N 127.8E			
121	300000Z	27.3N 128.8E	LHDH	-	5///											26.1N 127.8E			
122	300010Z	27.3N 128.8E	LHDH	-	POOR FIX, 10 DEG SPIRAL OVERLAY											26.4N 127.8E			
123	300046Z	27.3N 128.8E	LHDH	-	POOR FIX, 10 DEG SPIRAL OVERLAY											26.4N 127.8E			
124	300100Z	27.4N 128.8E	LHDH	-	55///											26.4N 129.5E			
125	300112Z	27.2N 128.8E	LHDH	-	POOR FIX, 10 DEG SPIRAL OVERLAY											26.4N 127.8E			
126	300140Z	27.3N 128.8E	LHDH	-	POOR FIX, 10 DEG SPIRAL OVERLAY											26.4N 127.8E			
127	300200Z	27.3N 128.8E	LHDH	-	5///											26.1N 127.8E			
128	300202Z	27.4N 128.8E	LHDH	-	POOR FIX, 10 DEG SPIRAL OVERLAY											28.0N 129.5E			
129	300213Z	27.3N 128.8E	LHDH	-	POOR FIX, 10 DEG SPIRAL OVERLAY											26.4N 127.8E			
130	300243Z	27.4N 128.8E	LHDH	-	POOR FIX, 10 DEG SPIRAL OVERLAY											26.4N 127.8E			
131	300300Z	27.4N 128.8E	LHDH	-	55///											28.4N 129.5E			
132	300302Z	27.3N 128.8E	LHDH	-	POOR FIX, EXTRAPOLATED, NO WELL DEFINED SPIRAL BANDS											26.4N 127.8E			
133	300307Z	27.4N 128.8E	LHDH	(1H DATA )						PCN 5 DMSP									
134	300308Z	27.1N 128.8E	SAT	(1H DATA )						PCN 5 DMSP									
135	300347Z	27.5N 128.8E	LHDH	-	POOR FIX, 10 DEG SPIRAL OVERLAY, WALL CLOUD NOT VISIBLE											26.4N 127.8E			
136	300400Z	27.5N 128.8E	LHDH	-	5///											26.1N 127.8E			
137	300400Z	27.3N 128.8E	LHDH	-	POOR FIX, 10 DEG SPIRAL OVERLAY											28.4N 129.5E			
138	300405Z	27.5N 128.8E	LHDH	-	POOR FIX, 10 DEG SPIRAL OVERLAY, NO WALL CLOUD											26.4N 127.8E			
139	300406Z	27.2N 128.8E	P	1	2 700 310 32 220 45 40 40 20 986 299 15 12 CTRC									60					
140	300406Z	27.5N 128.8E	LHDH	-	POOR FIX, 10 DEG SPIRAL OVERLAY, NO WALL CLOUD											26.0N 127.8E			
141	300500Z	27.5N 128.8E	LHDH	-	5///												26.1N 127.8E		
142	300515Z	27.5N 128.8E	LHDH	-	POOR FIX, 15 DEG SPIRAL OVERLAY											26.4N 127.8E			
143	300540Z	27.5N 129.0E	LHDH	-	POOR FIX, 15 DEG SPIRAL OVERLAY											26.4N 127.8E			
144	300610Z	27.5N 129.0E	LHDH	-	POOR FIX, 15 DEG SPIRAL OVERLAY, NO WELL DEFINED SPIRAL BANDS											26.4N 127.8E			
145	300637Z	27.5N 129.0E	LHDH	-	5///												26.4N 127.8E		
146	300700Z	27.1N 129.1E	LHDH	-	65///												26.1N 127.8E		
147	300702Z	27.1N 129.0E	LHDH	-	65///												28.4N 129.5E		
148	300710Z	27.2N 129.1E	LHDH	-	FAIR FIX, 15 DEG SPIRAL OVERLAY												26.4N 127.8E		
149	300740Z	27.2N 129.3E	LHDH	-	FAIR FIX, 15 DEG SPIRAL OVERLAY												26.4N 127.8E		
150	300805Z	27.1N 129.3E	LHDH	-	FAIR FIX												26.4N 127.8E		
151	300832Z	27.1N 129.4E	LHDH	-	FAIR FIX, 15 DEG SPIRAL OVERLAY												26.4N 127.8E		
152	300904Z	27.1N 129.4E	LHDH	-	31912												28.4N 129.5E		
153	300902Z	26.8N 129.4E	LHDH	-	5///												26.1N 127.8E		
154	300908Z	27.1N 129.5E	LHDH	-	15 DEG SPIRAL OVERLAY												26.4N 127.8E		
155	300906Z	27.0N 129.5E	LHDH	-	POOR FIX, 15 DEG SPIRAL OVERLAY												26.0N 127.8E		
156	301010Z	27.0N 129.2E	LHDH	-	POOR FIX, 15 DEG SPIRAL OVERLAY												26.0N 127.8E		
157	301014Z	27.1N 129.3E	LHDH	-	BY XINAP, NO SPIRAL BAND												26.0N 127.8E		
158	301200Z	26.8N 129.8E	SAT	(1H DATA )						PCN 3 DMSP									
159	301240Z	26.7N 129.3E	LHDH	-	POOR FIX, 10 DEG SPIRAL OVERLAY, NO WALL CLOUD												26.0N 127.8E		
160	301300Z	26.5N 129.9E	LHDH	-	5///												28.4N 129.5E		
161	301400Z	26.5N 130.3E	LHDH	-	55///												26.3N 127.8E		
162	301449Z	26.7N 130.3E	SAT	(1H DATA )						PCN 3 DMSP									
163	301600Z	26.5N 130.3E	LHDH	-	55//2												28.4N 129.5E		
164	301600Z	26.5N 130.3E	LHDH	-	6///1												26.1N 127.8E		
165	301650Z	26.4N 130.4E	P	1	2 700 290 40 260 40 - - - 990 302 17 13 - - -														
166	301700Z	26.5N 130.4E	LHDH	-	65//2												28.4N 129.5E		
167	302228Z	25.8N 131.5E	P	2	2 700 290 50 220 50 30 310 30 990 303 17 13 - - -														
168	302300Z	25.5N 131.6E	SAT	(12.5/2.5 /S0.5/24MHS)						PCN 3 DMSP									
169	302300Z	25.4N 131.5E	SAT	(12.5/2.5 /D0.5/24MHS)						PCN 3 DMSP									
170	310249Z	25.4N 133.0E	SAT	(1H DATA )						PCN 3 DMSP									
171	311142Z	25.2N 137.1E	SAT	(1H DATA )						PCN 5 DMSP									
172	311530Z	25.0N 137.4E	SAT	(1H DATA )						PCN 3 DMSP									
173	312242Z	27.7N 139.0E	SAT	(1H DATA )						PCN 3 DMSP									
174	010230Z	29.5N 139.8E	SAT	(1H DATA )						PCN 3 DMSP									
175	011124Z	31.3N 140.5E	SAT	(1H DATA )						PCN 3 DMSP									
176	011511Z	32.1N 140.2E	SAT	(1H DATA )						PCN 3 DMSP									

TYPHOON SHIRLEY  
FIX POSITIONS FOR CYCLONE NO. 22  
0000Z 04 SEP TO 0000Z 09 SEP

TYPHOON SHIRLEY  
FIX POSITIONS FOR CYCLONE NO. 22  
0000Z 04 SEP TO 0000Z 09 SEP

FIX NO.	TIME	POSIT	FIX ACCMRY	MAX OBS	WAA VWS	WNS	MIN	FAT	MISIT OF RADAR
			CAT NAV-MET	LVL	SPC WIND	MIN	VUOMA	LVL	ORIEN- TATION
				LVL	DIR VEL BMG RNG	SLP	HGT	TILT	EYE
101	060410Z	27.1N 129.1E	LHDM	- FAIR FIX, 20 DEG SPIRAL OVERLAY, 50 PERCENT WALL CLOUD	- - -	-	-	-	26.4N 127.0E
102	060430Z	26.8N 128.9E	LHDM	-	-	-	-	-	26.2N 127.7E
103	060435Z	27.1N 129.0E	LHDM	- FAIR FIX, 20 DEG SPIRAL OVERLAY	-	-	-	-	26.4N 127.5E
104	060500Z	27.1N 129.1E	LHDM	- 30423	-	-	-	-	26.4N 129.5E
105	060500Z	27.0N 129.0E	LHDM	- 5558/	-	-	-	-	26.2N 127.0E
106	060502Z	27.1N 129.0E	LHDM	- FAIR FIX, 20 DEG SPIRAL OVERLAY, 50 PERCENT WALL CLOUD	-	-	-	-	26.4N 127.0E
107	060530Z	27.1N 128.8E	LHDM	- GOOD FIX	-	-	-	-	26.4N 127.7E
108	060539Z	27.1N 129.0E	LHDM	- FAIR FIX, 20 DEG SPIRAL OVERLAY, 40 PERCENT WALL CLOUD	-	-	-	-	26.4N 127.5E
109	060600Z	27.1N 129.1E	LHDM	- 5///	-	-	-	-	26.2N 127.0E
110	060609Z	27.0N 129.0E	LHDM	- FAIR FIX, 20 DEG SPIRAL OVERLAY, 50 PERCENT WALL CLOUD	-	-	-	-	26.4N 127.0E
111	060630Z	27.3N 128.9E	LHDM	- POOR FIX	-	-	-	-	26.2N 127.0E
112	060639Z	27.0N 129.0E	LHDM	- FAIR FIX, 20 DEG SPIRAL OVERLAY, 40 PERCENT WALL CLOUD	-	-	-	-	26.4N 127.0E
113	060700Z	27.1N 128.9E	LHDM	- 32943	-	-	-	-	26.4N 129.5E
114	060700Z	27.2N 128.9E	LHDM	- 5///	-	-	-	-	26.2N 127.0E
115	060710Z	27.0N 129.0E	LHDM	- POOR FIX, 30 PERCENT WALL CLOUD	-	-	-	-	26.4N 127.0E
116	060730Z	27.2N 128.8E	LHDM	- POOR FIX	-	-	-	-	26.2N 127.0E
117	060739Z	27.0N 129.0E	LHDM	- FAIR FIX, 10 DEG SPIRAL OVERLAY, 50 PERCENT WALL CLOUD	-	-	-	-	26.4N 127.0E
118	060800Z	27.1N 128.9E	LHDM	- 2047/	-	-	-	-	26.4N 129.5E
119	060802Z	27.3N 128.8E	LHDM	- 5///	-	-	-	-	26.2N 127.0E
120	060809Z	27.0N 128.9E	LHDM	- GOOD FIX, 10 DEG SPIRAL OVERLAY, 50 PERCENT WALL CLOUD	-	-	-	-	26.4N 127.0E
121	060830Z	27.1N 128.6E	LHDM	- POOR FIX	-	-	-	-	26.2N 127.0E
122	060832Z	27.2N 128.6E	P 3	5 700 70 70 230 40 80 330 20 979 291 13 11 CTMC	-	-	-	40	-
123	060839Z	27.1N 128.9E	LHDM	- GOOD FIX, 10 DEG SPIRAL OVERLAY, 50 PERCENT WALL CLOUD	-	-	-	-	26.4N 127.0E
124	060910Z	27.0N 128.8E	LHDM	- FAIR FIX, 10 DEG SPIRAL OVERLAY, 40 PERCENT WALL CLOUD	-	-	-	-	26.4N 127.0E
125	060940Z	27.0N 128.8E	LHDM	- GOOD FIX, 10 DEG SPIRAL OVERLAY, 50 PERCENT WALL CLOUD	-	-	-	-	26.4N 127.0E
126	061000Z	27.1N 128.7E	LHDM	- 55/3/	-	-	-	-	26.4N 129.5E
127	061000Z	27.3N 128.6E	LHDM	- 5///	-	-	-	-	26.2N 127.0E
128	061009Z	27.0N 128.8E	LHDM	- GOOD FIX, 10 DEG SPIRAL OVERLAY, 50 PERCENT WALL CLOUD	-	-	-	-	26.4N 127.0E
129	061039Z	27.2N 128.6E	LHDM	- GOOD FIX, 10 DEG SPIRAL OVERLAY, 50 PERCENT WALL CLOUD	-	-	-	-	26.4N 127.0E
130	061100Z	27.2N 128.7E	LHDM	- 55/1/	-	-	-	-	26.4N 129.5E
131	061100Z	27.3N 128.5E	LHDM	- 5///	-	-	-	-	26.2N 127.0E
132	061109Z	27.1N 128.7E	LHDM	- GOOD FIX, 10 DEG SPIRAL OVERLAY, 60 PERCENT WALL CLOUD	-	-	-	-	26.4N 127.0E
133	061134Z	27.1N 128.9E	SAT	(1K DATA ) PCN 5 DMSP	-	-	-	-	-
134	061134Z	27.2N 129.0E	SAT	(1K DATA ) PCN 3 DMSP	-	-	-	-	-
135	061142Z	27.1N 128.6E	LHDM	- GOOD FIX, 10 DEG SPIRAL OVERLAY, 50 PERCENT WALL CLOUD	-	-	-	-	26.4N 127.0E
136	061200Z	27.2N 128.6E	LHDM	- 55//2	-	-	-	-	26.4N 129.5E
137	061242Z	27.2N 128.5E	LHDM	- GOOD FIX, 10 DEG SPIRAL OVERLAY, 60 PERCENT WALL CLOUD	-	-	-	-	26.4N 127.0E
138	061300Z	27.3N 128.5E	LHDM	- 55/32	-	-	-	-	26.4N 129.5E
139	061300Z	27.4N 128.4E	LHDM	- 5///	-	-	-	-	26.2N 127.0E
140	061319Z	27.1N 128.5E	SAT	(1K DATA ) PCN 3 DMSP	-	-	-	-	-
141	061340Z	27.3N 128.3E	LHDM	- GOOD FIX, 10 DEG SPIRAL OVERLAY, 50 PERCENT WALL CLOUD	-	-	-	-	26.4N 127.0E
142	061400Z	27.4N 128.4E	LHDM	- 55//1	-	-	-	-	26.4N 129.5E
143	061400Z	27.4N 128.3E	LHDM	- 5///	-	-	-	-	26.2N 127.0E
144	061440Z	27.5N 128.3E	LHDM	- GOOD FIX, 10 DEG SPIRAL OVERLAY, 50 PERCENT WALL CLOUD	-	-	-	-	26.4N 127.0E
145	061500Z	27.5N 128.2E	LHDM	- 55//2	-	-	-	-	26.4N 129.5E
146	061500Z	27.4N 128.1E	LHDM	- 20902	-	-	-	-	26.2N 127.0E
147	061510Z	27.5N 128.3E	LHDM	- GOOD FIX	-	-	-	-	26.4N 127.0E
148	061520Z	27.4N 128.5E	SAT	(1K DATA ) PCN 3 DMSP	-	-	-	-	-
149	061525Z	27.5N 128.3E	LHDM	- GOOD FIX, 20 DEG SPIRAL OVERLAY, 60 PERCENT WALL CLOUD	-	-	-	-	26.4N 127.0E
150	061600Z	27.5N 128.3E	LHDM	- 55//12	-	-	-	-	26.4N 129.5E
151	061600Z	27.5N 128.1E	LHDM	- 20822	-	-	-	-	26.2N 127.0E
152	061608Z	27.5N 128.3E	LHDM	- GOOD FIX, 10 DEG SPIRAL OVERLAY	-	-	-	-	26.4N 127.0E
153	061700Z	27.6N 128.2E	LHDM	- 55//1/	-	-	-	-	26.4N 129.5E
154	061700Z	27.6N 128.0E	LHDM	- 20932	-	-	-	-	26.4N 127.0E
155	061805Z	27.6N 128.2E	LHDM	- GOOD FIX, 10 DEG SPIRAL OVERLAY	-	-	-	-	26.4N 127.0E
156	061840Z	27.7N 128.3E	LHDM	- FAIR FIX, 15 DEG SPIRAL OVERLAY, 50 PERCENT WALL CLOUD	-	-	-	-	26.4N 127.0E
157	061900Z	27.7N 128.0E	LHDM	- 55//1/	-	-	-	-	26.4N 129.5E
158	061900Z	27.7N 127.9E	LHDM	- 5///2	-	-	-	-	26.2N 127.0E
159	061912Z	27.8N 128.1E	LHDM	- FAIR FIX, 10 DEG SPIRAL OVERLAY, 40 PERCENT WALL CLOUD	-	-	-	-	26.4N 127.0E
160	062000Z	27.8N 128.0E	LHDM	- 55//1/	-	-	-	-	26.4N 129.5E
161	062000Z	27.7N 127.9E	LHDM	- 5///	-	-	-	-	26.2N 127.0E
162	062008Z	27.8N 128.1E	LHDM	- FAIR FIX, 10 DEG SPIRAL OVERLAY, 40 PERCENT WALL CLOUD	-	-	-	-	26.4N 127.0E
163	062040Z	27.9N 127.9E	LHDM	- FAIR FIX, 10 DEG SPIRAL OVERLAY, 40 PERCENT WALL CLOUD	-	-	-	-	26.4N 127.0E
164	062100Z	27.8N 127.8E	LHDM	- 14/8/	-	-	-	-	26.4N 129.5E
165	062100Z	27.8N 127.9E	LHDM	- 5///	-	-	-	-	26.2N 127.0E
166	062142Z	27.8N 127.9E	LHDM	- FAIR FIX, 10 DEG SPIRAL OVERLAY, 40 PERCENT WALL CLOUD	-	-	-	-	26.4N 127.0E
167	062210Z	27.9N 128.0E	LHDM	- FAIR FIX, 10 DEG SPIRAL OVERLAY, 50 PERCENT WALL CLOUD	-	-	-	-	26.4N 127.0E
168	062200Z	27.9N 128.0E	LHDM	- 14/12	-	-	-	-	26.4N 129.5E
169	062200Z	27.8N 127.8E	LHDM	- 5///	-	-	-	-	26.2N 127.0E
170	062210Z	27.9N 127.9E	LHDM	- FAIR FIX, 10 DEG SPIRAL OVERLAY, 40 PERCENT WALL CLOUD OPEN N	-	-	-	-	26.4N 127.0E
171	062250Z	27.8N 127.9E	LHDM	- FAIR FIX, 10 DEG SPIRAL OVERLAY, 40 PERCENT WALL CLOUD OPEN N	-	-	-	-	26.4N 127.0E
172	062300Z	26.0N 127.9E	LHDM	- 55//4	-	-	-	-	26.4N 129.5E
173	062300Z	26.0N 127.8E	LHDM	- 5///	-	-	-	-	26.2N 127.0E
174	062310Z	27.1N 127.1E	LHDM	- FAIR FIX, 10 DEG SPIRAL OVERLAY, 40 PERCENT WALL CLOUD OPEN N	-	-	-	-	26.4N 127.0E
175	062330Z	26.1N 128.0E	LHDM	- POOR FIX	-	-	-	-	26.2N 127.0E
176	070000Z	26.0N 127.8E	LHDM	- FAIR FIX, 10 DEG SPIRAL OVERLAY, 30 PERCENT WALL CLOUD OPEN N	-	-	-	-	26.4N 127.0E
177	070015Z	26.1N 127.9E	SAT	(1.5-0.3-0/-S /25HRS) PCN 3 DMSP	-	-	-	-	-
178	070015Z	26.2N 128.3E	SAT	(1.5-0.3-0/-S / 1KSI PCN 3 DMSP	-	-	-	-	-
179	070041Z	26.1N 127.8E	LHDM	- FAIR FIX, 10 DEG SPIRAL OVERLAY, 30 PERCENT WALL CLOUD	-	-	-	-	26.4N 127.0E
180	070100Z	26.2N 127.8E	LHDM	- 21013	-	-	-	-	26.4N 129.5E
181	070100Z	26.2N 127.8E	LHDM	- 5///	-	-	-	-	26.2N 127.0E
182	070110Z	26.2N 127.7E	LHDM	- POOR FIX, 10 DEG SPIRAL OVERLAY	-	-	-	-	26.4N 127.0E
183	070130Z	26.3N 127.6E	LHDM	- FAIR FIX, 10 DEG SPIRAL OVERLAY	-	-	-	-	26.4N 127.0E
184	070140Z	26.2N 127.7E	LHDM	- FAIR FIX, 10 DEG SPIRAL OVERLAY	-	-	-	-	26.4N 127.0E
185	070200Z	26.3N 127.6E	LHDM	- 31033	-	-	-	-	26.4N 129.5E
186	070200Z	26.4N 127.6E	LHDM	- 5///	-	-	-	-	26.4N 129.5E
187	070210Z	26.2N 127.7E	LHDM	- FAIR FIX, 10 DEG SPIRAL OVERLAY	-	-	-	-	26.4N 127.0E
188	070221Z	26.0N 127.5E	SAT	(14.0/-0.0/-0.0/27HRS) PCN 1 DMSP	-	-	-	-	-
189	070238Z	26.2N 127.6E	LHDM	- FAIR FIX, 10 DEG SPIRAL OVERLAY, 40 PERCENT WALL CLOUD OPEN N	-	-	-	-	26.4N 127.0E
190	070300Z	26.4N 127.5E	LHDM	- 55//4	-	-	-	-	26.4N 127.0E
191	070310Z	26.2N 127.6E	LHDM	- FAIR FIX, 10 DEG SPIRAL OVERLAY, 40 PERCENT WALL CLOUD OPEN N	-	-	-	-	26.4N 127.0E
192	070320Z	26.4N 127.5E	P 5	2 700 160 80 90 35 90 40 35 482 295 15 12 CTMC	-	-	-	35	-
193	070332Z	26.2N 127.6E	LHDM	- FAIR FIX, 10 DEG SPIRAL OVERLAY, 30 PERCENT WALL CLOUD OPEN N	-	-	-	-	26.4N 127.0E
194	070400Z	26.3N 127.6E	LHDM	- 21013	-	-	-	-	26.4N 129.5E
195	070400Z	26.5N 127.6E	LHDM	- 5///	-	-	-	-	26.4N 127.0E
196	070410Z	26.3N 127.6E	LHDM	- FAIR FIX, 10 DEG SPIRAL OVERLAY, 30 PERCENT WALL CLOUD OPEN N	-	-	-	-	26.4N 127.0E
197	070430Z	26.5N 127.7E	LHDM	- GOOD FIX	-	-	-	-	26.4N 127.0E
198	070443Z	26.3N 127.6E	LHDM	- FAIR FIX, 10 DEG SPIRAL OVERLAY, 30 PERCENT WALL CLOUD OPEN N	-	-	-	-	26.4N 129.5E
199	070500Z	26.4N 127.6E	LHDM	- 35012	-	-	-	-	26.4N 129.5E
200	070500Z	26.0N 127.6E	LHDM	- 5///	-	-	-	-	26.2N 127.0E

TYPHOON SHIRLEY  
FIX POSITIONS FOR CYCLONE NO. 22  
0000Z 04 SEP TO 0000Z 09 SEP

FIX NO.	TIME	POSII	FIX CAT	ACCHY	MAX OBS LVL	MAX OBS DIR	MAX OBS VEL	MIN OBS BKG	MIN OBS WNG	MIN OBS SLP	MIN OBS HGT	MIN OBS T1/T0	MIN OBS FORM	MIN OBS IATN	MIN OBS EYE	MIN OBS DIA	MPOS OF RADAR	MSN NMBS
201	070510Z	28.4N 127.8E	LNUK	- FAIR FIX+	10 DEG SPIRAL OVERLAY, 30	PERCENT WALL CLOUD OPEN N	-	-	-	-	-	-	-	-	-	26.4N 127.8E		
202	070530Z	28.5N 127.6E	LNUK	- POOR FIX	-	-	-	-	-	-	-	-	-	-	-	26.4N 127.7E		
203	070540Z	28.5N 127.8E	LNUK	- FAIR FIX,	10 DEG SPIRAL OVERLAY, 30	PERCENT WALL CLOUD OPEN N	-	-	-	-	-	-	-	-	-	26.4N 127.8E		
204	070600Z	28.5N 127.7E	LNUK	- 0///	-	-	-	-	-	-	-	-	-	-	-	26.4N 127.8E		
205	070605Z	28.5N 127.8E	LNUK	- FAIR FIX+	10 DEG SPIRAL OVERLAY, 30	PERCENT WALL CLOUD OPEN N	-	-	-	-	-	-	-	-	-	26.4N 127.8E		
206	070700Z	28.5N 127.6E	LNUK	- 32043	-	-	-	-	-	-	-	-	-	-	-	26.4N 127.5E		
207	070700Z	28.5N 127.6E	LNUK	- 0///	-	-	-	-	-	-	-	-	-	-	-	26.4N 127.5E		
208	070705Z	28.5N 127.6E	LNUK	- FAIR FIX+ 10 DEG SPIRAL OVERLAY, 30	PERCENT WALL CLOUD OPEN N	-	-	-	-	-	-	-	-	-	-	26.4N 127.5E		
209	070800Z	28.6N 127.6E	LNUK	- 62013	-	-	-	-	-	-	-	-	-	-	-	28.4N 129.5E		
210	070805Z	28.6N 127.6E	LNUK	P 1	3 700	130 70	40	30	90	40	35	972	285	10 12	CTRC	40		
211	070900Z	28.5N 127.6E	LNUK	- 21523	-	-	-	-	-	-	-	-	-	-	-	28.4N 129.5E		
212	071000Z	28.5N 127.6E	LNUK	- 6542	-	-	-	-	-	-	-	-	-	-	-	28.4N 129.5E		
213	071200Z	28.5N 127.6E	LNUK	- 6544	-	-	-	-	-	-	-	-	-	-	-	28.4N 129.5E		
214	071257Z	28.5N 127.9E	SAT	(IK DATA	-	-	-	-	-	-	-	-	-	-	-	28.4N 129.5E		
215	071300Z	28.5N 127.5E	LNUK	- 6544	-	-	-	-	-	-	-	-	-	-	-	28.4N 129.5E		
216	071400Z	28.5N 127.4E	LNUK	- 6544	-	-	-	-	-	-	-	-	-	-	-	28.4N 129.5E		
217	071415Z	28.5N 127.5E	P 1	5 700	140	60	60	30	-	-	-	974	288	19 11	-	-	28.4N 129.5E	
218	071500Z	28.5N 127.5E	LNUK	- 0514	-	-	-	-	-	-	-	-	-	-	-	28.4N 129.5E		
219	071502Z	28.5N 127.4E	SAT	(IK DATA	-	-	-	-	-	-	-	-	-	-	-	28.4N 129.5E		
220	071800Z	28.5N 127.6E	LNUK	- 0514	-	-	-	-	-	-	-	-	-	-	-	28.4N 129.5E		
221	071900Z	28.5N 127.8E	LNUK	- 6543	-	-	-	-	-	-	-	-	-	-	-	28.4N 129.5E		
222	072000Z	28.5N 127.8E	LNUK	- 6513	-	-	-	-	-	-	-	-	-	-	-	28.4N 129.5E		
223	072100Z	28.5N 128.1E	LNUK	- 6512	-	-	-	-	-	-	-	-	-	-	-	28.4N 129.5E		
224	072200Z	28.5N 128.2E	LNUK	- 6514	-	-	-	-	-	-	-	-	-	-	-	28.4N 129.5E		
225	072215Z	28.5N 127.7E	P 10	3 700	140	80	50	20	80	360	10	983	299	21	-	CTNC	12	
226	072300Z	28.5N 128.2E	LNUK	- 6543	-	-	-	-	-	-	-	-	-	-	-	28.4N 129.5E		
227	072357Z	28.5N 127.6E	SAT	(IK DATA	-	-	-	-	-	-	-	-	-	-	-	28.4N 129.5E		
228	072357Z	28.5N 128.4E	SAT	(14.0/0.40-/S1.0/24HRS)	-	-	-	-	-	-	-	-	-	-	-	28.4N 129.5E		
229	080000Z	29.5N 128.4E	LNUK	- 6///2	-	-	-	-	-	-	-	-	-	-	-	30.4N 131.0E		
230	080030Z	29.5N 127.6E	P 1	-	700	240	70	170	20	70	170	20	-	-	21 18	-	-	7
231	080100Z	30.0N 128.5E	LNUK	- 6///2	-	-	-	-	-	-	-	-	-	-	-	30.4N 131.0E		
232	080100Z	30.0N 128.5E	LNUK	- 6512	-	-	-	-	-	-	-	-	-	-	-	28.4N 129.5E		
233	080200Z	30.2N 128.6E	LNUK	- 6///2	-	-	-	-	-	-	-	-	-	-	-	30.4N 131.0E		
234	080200Z	30.1N 128.5E	LNUK	- 21822	-	-	-	-	-	-	-	-	-	-	-	28.4N 129.5E		
235	080202Z	30.5N 128.8E	SAT	(13.0/0.40-/W1.0/24HRS)	-	-	-	-	-	-	-	-	-	-	-	30.4N 131.0E		
236	080400Z	29.5N 127.5E	P 1	3 700	260	55	180	20	75	300	10	983	297	21 18	CTRC	10		
237	080300Z	30.3N 128.6E	LNUK	- 20402	-	-	-	-	-	-	-	-	-	-	-	33.4N 130.4E		
238	080300Z	30.4N 128.7E	LNUK	- 14022	-	-	-	-	-	-	-	-	-	-	-	30.4N 131.0E		
239	080300Z	30.3N 128.8E	LNUK	- 22922	-	-	-	-	-	-	-	-	-	-	-	28.4N 129.5E		
240	080400Z	30.6N 128.7E	LNUK	- 20412	-	-	-	-	-	-	-	-	-	-	-	33.4N 130.4E		
241	080400Z	30.5N 128.8E	LNUK	- 4542	-	-	-	-	-	-	-	-	-	-	-	30.4N 131.0E		
242	080400Z	30.6N 128.8E	LNUK	- 22712	-	-	-	-	-	-	-	-	-	-	-	28.4N 129.5E		
243	080500Z	30.6N 128.8E	LNUK	- 40412	-	-	-	-	-	-	-	-	-	-	-	33.4N 130.4E		
244	080500Z	30.6N 128.9E	LNUK	- 5542	-	-	-	-	-	-	-	-	-	-	-	30.4N 131.0E		
245	080500Z	30.7N 128.9E	LNUK	- 22712	-	-	-	-	-	-	-	-	-	-	-	28.4N 129.5E		
246	080600Z	30.8N 129.0E	LNUK	- 551/2	-	-	-	-	-	-	-	-	-	-	-	33.4N 130.4E		
247	080600Z	30.7N 129.1E	LNUK	- 155/2	-	-	-	-	-	-	-	-	-	-	-	30.4N 131.0E		
248	080600Z	30.7N 129.0E	LNUK	- 15542	-	-	-	-	-	-	-	-	-	-	-	28.4N 129.5E		
249	080700Z	31.0N 129.3E	LNUK	- 10472	-	-	-	-	-	-	-	-	-	-	-	33.4N 130.4E		
250	080700Z	30.7N 129.4E	LNUK	- 257/2	-	-	-	-	-	-	-	-	-	-	-	30.4N 131.0E		
251	080700Z	30.4N 129.3E	LNUK	- 22303	-	-	-	-	-	-	-	-	-	-	-	28.4N 129.5E		
252	080800Z	31.0N 129.6E	LNUK	- 5///1	-	-	-	-	-	-	-	-	-	-	-	30.4N 130.4E		
253	080800Z	30.9N 129.6E	LNUK	- 32812	-	-	-	-	-	-	-	-	-	-	-	30.4N 131.0E		
254	080800Z	30.9N 129.4E	LNUK	- 551/3	-	-	-	-	-	-	-	-	-	-	-	28.4N 129.5E		
255	080900Z	31.1N 129.7E	LNUK	- 5///1	-	-	-	-	-	-	-	-	-	-	-	33.4N 130.4E		
256	080900Z	31.0N 129.7E	LNUK	- 1012	-	-	-	-	-	-	-	-	-	-	-	30.4N 131.0E		
257	080900Z	31.1N 129.6E	LNUK	- 657/3	-	-	-	-	-	-	-	-	-	-	-	30.4N 131.0E		
258	081000Z	31.1N 129.6E	LNUK	- 10901	-	-	-	-	-	-	-	-	-	-	-	28.4N 129.5E		
259	081000Z	31.2N 130.0E	LNUK	- 11813	-	-	-	-	-	-	-	-	-	-	-	33.4N 130.4E		
260	081100Z	31.3N 129.6E	LNUK	- 55/63	-	-	-	-	-	-	-	-	-	-	-	30.4N 131.0E		
261	081100Z	31.3N 129.9E	LNUK	- 55/63	-	-	-	-	-	-	-	-	-	-	-	28.4N 129.5E		
262	081100Z	31.3N 130.1E	LNUK	- 10811	-	-	-	-	-	-	-	-	-	-	-	33.4N 130.4E		
263	081100Z	31.3N 130.1E	LNUK	- 11813	-	-	-	-	-	-	-	-	-	-	-	30.4N 131.0E		
264	081100Z	31.3N 130.3E	LNUK	- 55/13	-	-	-	-	-	-	-	-	-	-	-	28.4N 129.5E		
265	081200Z	31.5N 130.4E	LNUK	-	-	-	-	-	-	-	-	-	-	-	-	33.4N 130.4E		
266	081200Z	31.4N 130.4E	LNUK	- 10911	-	-	-	-	-	-	-	-	-	-	-	30.4N 130.5E		
267	081200Z	31.5N 130.4E	LNUK	- 21933	-	-	-	-	-	-	-	-	-	-	-	33.4N 130.4E		
268	081200Z	31.4N 130+*E	LNUK	- 55/63	-	-	-	-	-	-	-	-	-	-	-	30.4N 131.0E		
269	081239Z	31.6N 130+*E	SAT	(IK DATA	-	-	-	-	-	-	-	-	-	-	-	28.4N 129.5E		
270	081300Z	31.7N 130+*.7E	LNUK	- 10651	-	-	-	-	-	-	-	-	-	-	-	33.4N 130+*.4L		
271	081300Z	31.8N 130+*.0E	LNUK	- 20823	-	-	-	-	-	-	-	-	-	-	-	30.4N 131+*.0L		
272	081300Z	31.6N 130+*.5E	LNUK	- 60000 FIX	-	-	-	-	-	-	-	-	-	-	-	33.4N 130+*.5L		
273	081400Z	31.9N 130+*.6E	LNUK	- 21943	-	-	-	-	-	-	-	-	-	-	-	33.4N 130+*.4E		
274	081400Z	32.0N 130+*.6E	LNUK	- 34/63	-	-	-	-	-	-	-	-	-	-	-	30.4N 131+*.0L		
275	081400Z	32.0N 130+*.9E	LNUK	- 20000 FIX	-	-	-	-	-	-	-	-	-	-	-	33.4N 130+*.5L		
276	081500Z	32.2N 131+*.2E	LNUK	- 5///1	-	-	-	-	-	-	-	-	-	-	-	33.4N 130+*.4E		
277	081600Z	32.7N 131+*.5E	LNUK	- 5///1	-	-	-	-	-	-	-	-	-	-	-	33.4N 130+*.4E		
278	081600Z	32.7N 131+*.7E	LNUK	- 25//2	-	-	-	-	-	-	-	-	-	-	-	33.4N 130+*.4E		
279	081700Z	33.1N 131+*.4E	LNUK	- 65//1	-	-	-</td											

TROPICAL STORM TRIX  
FIX POSITIONS FOR CYCLONE NO. 23  
1200Z 05 SEP TO 1200Z 06 SEP

FIX NO.	TIME	POSIT	FIX CAT	ACCHY	FIX LVL	FLT DIR	LVL VEL	SFC BRG	WIND HNG	MAX OBS OBS	MAX OBS SFC WIND	OBS MIN	MIN 700MB	LVL SLP	FLT MGT	EYE TI/T0	ORIEN- FORM	EYE IATION	PUSIT UP HAUAR	MSN NMHH
1	050952Z	20.1N 115.9E	SAT	(T3.0/3.0 /	/ HRS)					PCN 3	DMSP									
2	050900Z	20.6N 115.1E	LDRX	-																
3	051200Z	20.6N 115.7E	LDRX	-																
4	051334Z	20.0N 115.5E	SAT	(IR DATA	)					PCN 5	DMSP									
5	051424	20.0N 115.0E	SAT	(IR DATA	)					NOAA-2										
6	051500Z	20.7N 114.1E	LDRX	-																
7	051800Z	20.7N 113.5E	LDRX	-																
8	052100Z	20.8N 113.3E	LDRX	-																
9	060000Z	20.9N 113.1E	LDRX	-																
10	060034Z	20.5N 112.8E	SAT	(T3.0/3.0-/S	/24HRS)					PCN 5	DMSP									
11	060202Z	21.4N 112.4E	SAT	(T3.0/3.0-/01.0/24HRS)						NOAA-2										
12	060310Z	21.4N 112.4E	LDRX	-																
13	060600Z	21.7N 112.1E	LDRX	-																
14	060900Z	21.9N 111.4E	LDRX	-																
15	061315Z	22.3N 109.9E	SAT	(IR DATA	)					PCN 5	DMSP									
16	061315Z	22.5N 110.8E	SAT	(IR DATA	)					PCN 5	DMSP									
17	070015Z	22.6N 107.9E	SAT	(IR DATA	)					PCN 5	DMSP									

TYPHOON VIRGINIA  
FIX POSITIONS FOR CYCLONE NO. 24  
1200Z 12 SEP TO 0000Z 16 SEP

FIX NO.	TIME	POSIT	FIX CAT	ACCHY	FIX LVL	FLT DIR	LVL VEL	SFC BRG	WIND HNG	MAX OBS OBS	MAX OBS SFC WIND	OBS MIN	MIN 700MB	LVL SLP	FLT MGT	EYE TI/T0	ORIEN- FORM	EYE IATION	PUSIT UP HAUAR	MSN NMHH
1	092139Z	22.0N 153.4E	SAT	(11.0/1.0 /	/ HRS)					PCN 6	DMSP									
2	101021Z	23.0N 152.8E	SAT	(IR DATA	)					PCN 6	DMSP									
3	102302Z	24.5N 150.8E	SAT	(11.0/1.0 / S	/24HRS)					PCN 5	DMSP									
4	111146Z	27.2N 149.8E	SAT	(IR DATA	)					PCN 5	DMSP									
5	112243Z	28.9N 149.1E	SAT	(12.0/2.0 / D1.0/24HRS)						PCN 5	DMSP									
6	121120Z	30.1N 150.6E	SAT	(IR DATA	)					PCN 3	DMSP									
7	121126Z	30.5N 150.7E	SAT	(IR DATA	)					PCN 5	DMSP									
8	121510Z	31.1N 151.2E	SAT	(IR DATA	)					PCN 5	DMSP									
9	121845Z	31.0N 151.0E	SAT	(IR DATA	)					NOAA-2	-									
10	122153Z	32.0N 152.2E	P 10	2	700	270	80	240		25	70	190	20	980	293	14	11	CTHC	40	
11	122226Z	32.5N 152.3E	SAT	(14.0/4.0 /	/ HRS)					PCN 3	DMSP									
12	130211Z	32.7N 153.0E	SAT	(IR DATA	)					PCN 3	DMSP									
13	130220Z	32.6N 152.8E	P 10	3	700	300	75	230	30	80	230	25	980	294	15	11	CTHC	40		
14	130750Z	32.3N 151.6E	SAT	(13.5/3.5 / S	/24HRS)					NUN	DMSP									
15	131107Z	33.8N 153.8E	SAT	(IR DATA	)					NOAA-2	-									
16	131107Z	33.7N 153.9E	SAT	(IR DATA	)					PCN 3	DMSP									
17	131452Z	34.2N 154.4E	SAT	(IR DATA	)					PCN 5	DMSP									
18	131457Z	34.5N 154.2E	P 5	5	700	30	50	320	35	-	-			975	286	17	10	EITP	N-S 60X30	
19	132005Z	34.1N 154.0E	SAT	(IR DATA	)					NUN	DMSP									
20	132207Z	35.3N 155.1E	SAT	(14.0/4.0 / S	/24HRS)					PNAA-2	-									
21	132207Z	35.2N 155.2E	SAT	(14.0/4.0 /	/48HRS)					PCN 1	DMSP									
22	140152Z	35.7N 155.7E	SAT	(IR DATA	)					PCN 1	DMSP									
23	140330Z	35.9N 155.8E	P 10	4	700	330	80	280	30	80	280	70	971	282	10	6	CTHC	40		
24	140545Z	35.3N 155.0E	SAT	(13.5/3.5 / S	/24HRS)					NUN	DMSP									
25	140702Z	36.8N 156.3E	P -	700	280	90	180		NOAA-2	-										
26	141049Z	37.0N 156.1E	SAT	(IR DATA	)					PCN 2	DMSP									
27	141049Z	37.0N 156.4E	SAT	(IR DATA	)					PCN 3	DMSP									
28	142039Z	39.1N 155.6E	SAT	(13.0/4.0 / W1.0/24HRS)					PCN 3	DMSP										
29	142149Z	36.8N 155.5E	SAT	(IR DATA	)					PCN 1	DMSP									
30	150134Z	39.6N 155.1E	SAT	(IR DATA	)					PCN 1	DMSP									
31	150540Z	36.2N 154.5E	SAT	(13.0/3.5 / W0.5/24HRS)					NOAA-2	-										
32	151012Z	36.5N 153.5E	SAT	(IR DATA	)					PCN 4	DMSP									
33	152010Z	40.0N 154.5E	SAT	(IR DATA	)					NOAA-2	-									
34	160115Z	41.6N 154.5E	SAT	(11.5/1.5 /	/ HRS)					PCN 4	DMSP									

TROPICAL STORM WENDY  
FIX POSITIONS FOR CYCLONE NO. 25  
0600Z 24 SEP TO 0000Z 30 SEP

FIX NO.	TIME	POSIT	FIX CAT	ACCHY	FIX LVL	FLT DIR	LVL VEL	SFC BRG	WIND HNG	MAX OBS OBS	MAX OBS SFC WIND	OBS MIN	MIN 700MB	LVL SLP	FLT MGT	EYE TI/T0	ORIEN- FORM	EYE IATION	PUSIT UP HAUAR	MSN NMHH
1	190142Z	15.6N 145.9E	SAT	(IR DATA	)					PCN 5	DMSP									
2	192104Z	15.6N 145.6E	SAT	(11.0/1.0 /	/ HRS)					PCN 5	DMSP									
3	192159Z	15.5N 145.5E	SAT	(IR DATA	)					PCN 5	DMSP									
4	201041Z	14.5N 144.8E	SAT	(IR DATA	)					PCN 6	DMSP									
5	201432Z	14.3N 144.6E	SAT	(IR DATA	)					PCN 6	DMSP									
6	202049Z	15.1N 140.5E	SAT	(11.0/1.0 / S	/24HRS)					PCN 5	DMSP									
7	202322Z	16.0N 139.6E	SAT	(IR DATA	)					PCN 5	DMSP									
8	210305Z	16.0N 139.3E	SAT	(IR DATA	)					PCN 5	DMSP									
9	212104Z	13.3N 138.6E	SAT	(IR DATA	)					PCN 6	DMSP									
10	212304Z	13.0N 137.3E	SAT	(IR DATA	)					PCN 7	DMSP									
11	221146Z	14.2N 132.9E	SAT	(IR DATA	)					PCN 6	DMSP									
12	230027Z	15.1N 129.3E	SAT	(11.0/1.0 /	/ HRS)					PCN 5	DMSP									
13	240009Z	17.0N 124.1E	SAT	(12.0/2.0 /	/ HRS)					PCN 5	DMSP									
14	240009Z	17.0N 123.9E	SAT	(12.0/2.0 / D1.0/24HRS)					PCN 5	DMSP										
15	240009Z	17.0N 123.9E	SAT	(12.0/2.0 / D1.0/24HRS)					PCN 5	DMSP										
16	240532Z	17.0N 124.1E	P 3	5	700	40	50	320	60	25	20	60	1001	308	8	9	-	-		
17	241251Z	16.5N 122.9E	SAT	(IR DATA	)					PCN 3	DMSP									
18	241251Z	16.3N 123.0E	SAT	(IR DATA	)					PCN 6	DMSP									
19	241251Z	16.2N 123.3E	SAT	(IR DATA	)					PCN 3	DMSP									
20	241700Z	17.0N 122.6E	P 3	5	700	40	50	40	40	-	-		1003	308	11	10	-	-		
21	242152Z	19.0N 122.7E	P 5	2	700	140	40	40	50	25	40	50	499	304	14</					

TROPICAL STORM WENDY  
FIX POSITIONS FOR CYCLONE NO. 25  
0800Z 24 SEP TO 0000Z 30 SEP

FIX NO.	TIME	POSIT CAT	FIX ACQRY	FIX CAT	FLT LVL	WIND DIR-YEL	SFC BLK	MIN BLK	FLT RNG	OBS SLP	MIN MGT	WIND LVL	EYE THTO	ORIEN- TATION	EYE DIA	POSIT OF RADAR	MSN NMNR	
33	260114Z	19.8N 119.4E	SAT	(12.0/2.0 /D0.5/24HRS)	PCN 5	DMSP												
34	260314Z	19.8N 120.5E	SAT	(IN DATA )	PCN 3	DMSP												
35	260336Z	19.8N 120.4E	P	2 1 700 230 40 130	15 3 140	15 997	-	-	-	CTHC	25						6	
36	260914Z	20.0N 120.4E	P	2 1 700 170 55 90	35 50 290	15 993	303	14 12	CTHC	30							6	
37	261200Z	20.1N 120.2E	SAT			NOAA-3				(CONF 01)								
38	261214Z	20.0N 120.3E	SAT	(IN DATA )	PCN 4	DMSP												
39	261214Z	20.0N 120.7E	SAT	(IN DATA )	PCN 5	DMSP												
40	261555Z	21.0N 120.5E	SAT	(IN DATA )	PCN 3	DMSP												
41	262000Z	21.0N 120.5E	LHM	- 6///												22.0N 120+3E		
42	262100Z	21.3N 120.6E	LHM	- 6///												22.0N 120+3E		
43	262200Z	21.3N 120.5E	LHM	- 51111												22.0N 120+3E		
44	262200Z	21.0N 120.4E	P	1 1 700 310 50 200	33 4	94	20	992	303	12 10	-	-	-	-	-		7	
45	270000Z	21.0N 120.5E	LHM	- 6///												22.0N 120+3E		
46	270556Z	21.2N 121.1E	SAT	(13.0/3.0 /D0.5/24HRS)	PCN 3	DMSP												
47	270956Z	21.3N 121.0E	SAT	(14.0/4.0 /D2.0/24HRS)	PCN 3	DMSP												
48	271100Z	22.2N 121.8E	LHM	- 24922												23.0N 121+0E		
49	271249Z	22.8N 121.8E	P	2 1 700 270 65 170	20	-	-	-	-	984	296	17 10	CTHC	20			8	
50	271256Z	23.0N 122.0E	SAT	(IN DATA )	NOAA-3					(CONF 01)								
51	271337Z	22.6N 121.7E	SAT	(IN DATA )	PCN 5	DMSP												
52	271357Z	22.8N 122.1E	SAT	(IN DATA )	PCN 3	DMSP												
53	271536Z	23.2N 122.1E	SAT	(IN DATA )	PCN 3	DMSP												
54	271544Z	23.2N 122.2E	P	2 2 700 290 75 180	25	-	-	-	-	986	296	17 11	CTHC	35			8	
55	271600Z	23.3N 122.4E	LHM	- 7//72												24.0N 125+3E		
56	271700Z	23.5N 122.1E	LHM	- 6//72												24.0N 124+2E		
57	271700Z	23.4N 122.2E	LHM	- 7//74												24.0N 125+3E		
58	271800Z	23.4N 122.2E	LHM	- 10932												23.0N 121+0E		
59	271800Z	23.6N 122.1E	LHM	- 5//72												24.0N 124+2E		
60	271800Z	23.5N 122.3E	LHM	- 7//74												24.0N 125+3E		
61	271900Z	23.6N 122.4E	LHM	-												24.0N 125+3E		
62	271900Z	23.6N 122.4E	LHM	- 5//72												24.0N 124+2E		
63	271900Z	23.7N 122.3E	LHM	- 7//74												24.0N 125+3E		
64	271950Z	23.7N 122.2E	LHM	- 21912												23.0N 121+0E		
65	272000Z	23.7N 122.2E	LHM	- 30903												24.0N 124+2E		
66	272000Z	23.8N 122.5E	LHM	- 7//74												24.0N 125+3E		
67	272000Z	23.7N 122.3E	LHM	- 21922												23.0N 121+0E		
68	272100Z	23.8N 122.3E	LHM	- 7//74												24.0N 125+3E		
69	272200Z	24.0N 122.5E	LHM	- 5//73												24.0N 125+3E		
70	272217Z	23.7N 122.6E	P	1 2 700 290 50 210	35	3 90	10	987	298	14	-	-	-	-	-		9	
71	272300Z	24.0N 122.3E	LHM	- 5//74												24.0N 124+2E		
72	272300Z	23.9N 122.5E	LHM	- 5//74												24.0N 125+3E		
73	280000Z	24.1N 122.4E	LHM	- 5//72												24.0N 124+2E		
74	280000Z	24.0N 122.5E	LHM	- 5//73												24.0N 125+3E		
75	280038Z	24.3N 122.8E	SAT	(13.5/3.5 /D0.5/24HRS)	PCN 3	DMSP												
76	280100Z	24.2N 122.5E	LHM	- 5//72												24.0N 124+2E		
77	280100Z	24.2N 122.7E	LHM	- 5//73												24.0N 125+3E		
78	280200Z	24.3N 122.2E	LHM	- POOR FIX												26.0N 127+7E		
79	280200Z	24.4N 122.6E	LHM	- 5//72												24.0N 124+2E		
80	280200Z	24.2N 122.3E	LHM	- 5//73												24.0N 125+3E		
81	280237Z	24.5N 122.2E	SAT	(13.0/4.0 /W1.0/24HRS)	PCN 3	DMSP												
82	280247Z	24.5N 122.2E	P	1 3 700 230 70 140	25	-	-	-	-	986	297	13	-	-	-		9	
83	280300Z	24.5N 122.6E	LHM	- 5//72												24.0N 124+2E		
84	280300Z	24.6N 122.4E	LHM	- 5//73												24.0N 125+3E		
85	280500Z	24.0N 122.1E	LHM	- 5//72												24.0N 124+2E		
86	280700Z	24.8N 122.1E	LHM	- 22053												23.0N 121+0E		
87	280700Z	24.8N 122.2E	LHM	- 5//72												24.0N 124+2E		
88	280700Z	24.7N 122.3E	LHM	- 5//73												24.0N 125+3E		
89	280800Z	24.8N 122.2E	LHM	- 22014												24.0N 124+2E		
90	280800Z	24.8N 122.2E	LHM	- 5//73												24.0N 125+3E		
91	280900Z	24.9N 122.2E	LHM	- 20733												23.0N 121+0E		
92	280900Z	24.8N 122.3E	LHM	- 5//73												24.0N 125+3E		
93	280900Z	24.9N 122.2E	LHM	- 21814												24.0N 124+2E		
94	280900Z	24.8N 122.1E	LHM	- POOR FIX												26.0N 127+7E		
95	281000Z	24.9N 122.1E	LHM	- 55//4												24.0N 124+2E		
96	281000Z	24.9N 122.2E	LHM	- 0//1												24.0N 125+3E		
97	281100Z	24.9N 121.8E	LHM	- POOR FIX												26.0N 127+7E		
98	281100Z	25.1N 121.9E	LHM	- 5//73												24.0N 125+3E		
99	281157Z	25.0N 123.0E	SAT	(IN DATA )	NOAA-3					(CONF 01)								
100	281200Z	25.0N 121.9E	LHM	-												24.0N 124+2E		
101	281200Z	25.0N 121.7E	LHM	- 5//74												24.0N 125+3E		
102	281300Z	25.0N 121.6E	LHM	- 5//74												24.0N 124+2E		
103	281319Z	24.9N 121.8E	SAT	(IN DATA )	PCN 3	DMSP												
104	281509Z	25.0N 122.5E	P	5 10 700 160 45 70	40	-	-	-	-								10	
105	290019Z	25.2N 120.9E	SAT	(IN DATA )	PCN 3	DMSP												
106	290019Z	25.1N 120.8E	SAT	(11.5/2.5 /W1.0/24HRS)	PCN 3	DMSP												
107	290019Z	24.2N 120.6E	SAT	(11.5/3.0 / / HRS)	PCN 3	DMSP												
108	290039Z	24.8N 120.7E	SAT	(11.5/3.0 / / HRS)	PCN 3	DMSP												
109	290039Z	25.0N 120.6E	SAT	(IN DATA )	PCN 3	DMSP												
110	291301Z	25.4N 120.7E	SAT	(IN DATA )	PCN 5	DMSP												
111	291301Z	25.5N 120.6E	SAT	(IN DATA )	PCN 5	DMSP												
112	291301Z	25.4N 121.1E	SAT	(IN DATA )	PCN 5	DMSP												
113	300001Z	26.0N 120.1E	SAT	(11.0/1.5 /W0.5/24HRS)	PCN 5	DMSP												
114	300001Z	25.9N 121.2E	SAT	(11.5/2.5 /W1.5/24HRS)	PCN 5	DMSP												
115	300001Z	26.0N 121.0E	SAT	(11.5/2.5-1/W1.5/24HRS)	PCN 3	DMSP												
116	300341Z	25.9N 121.5E	SAT	(IN DATA )	PCN 3	DMSP												
117	300341Z	25.8N 121.4E	SAT	(IN DATA )	PCN 3	DMSP												

TYPHOON AGNES  
FIX POSITIONS FOR CYCLONE NO. 26  
1800Z 24 SEP TO 0600Z 02 OCT

FIX NO.	TIME	POSUTI	CAT	ACCHY	FLT	NAV-MET	LVL	DIR	VEL	BRG	RNG	MAX OBS			MAX UBS			OBS			MIN			FLI			PUSIT			
												SAT	(IH DATA	)	SFC	WIND	MIN	RDGB	LVL	SLP	MGT	T1/T0	EYF	OHEN-	ATIUN	EYF	UF	RADAR	MSN	NMBK
1	201017Z	14.5N 145.0E	SAT	(IH DATA											NOAA-3		(CONF 01)													
2	201018Z	15.0N 159.0E	SAT	(IH DATA											PCN 0	DMSP														
3	202049Z	16.0N 160.0E	SAT	(IH DATA											PCN 5	DMSP														
4	202141Z	16.1N 159.0E	SAT	(IH 0/1.0 /											PCN 5	DMSP														
5	210030Z	15.0N 140.0E	SAT	(IH 5/2.5 /W1.5/25HRS)											NOAA-3		(CONF 02)													
6	210124Z	17.0N 162.0E	SAT	(IH DATA											PCN 5	DMSP														
7	211022Z	16.2N 159.3E	SAT	(IH DATA											PCN 6	DMSP														
8	211113Z	15.0N 138.0E	SAT	(IH DATA											NOAA-3		(CONF 02)													
9	212033Z	17.2N 157.0E	SAT	(IH DATA											PCN 5	DMSP														
10	212133Z	17.2N 157.0E	SAT	(IH 0/1.0 /S /24HRS)											PCN 5	DMSP														
11	221004Z	21.0N 158.3E	SAT	(IH DATA											PCN 0	DMSP														
12	222018Z	22.3N 158.6E	SAT	(IH DATA											PCN 6	DMSP														
13	222104Z	22.3N 158.4E	SAT	(T 0/2.0 /											(T 0/2.0 /	/ HRS)	PCN 4	DMSP												
14	222272Z	22.2N 157.8E	SAT	(IH 5/1.5 /W0.5/24HRS)											NOAA-3		(CONF 01)													
15	230046Z	22.5N 157.9E	SAT	(IH DATA											PCN 3	DMSP														
16	230115Z	22.0N 158.2E	SAT	(IH DATA											NOAA-3		(CONF 02)													
17	230946Z	22.5N 157.8E	SAT	(IH DATA											PCN 6	DMSP														
18	232002Z	22.5N 158.4E	SAT	(T 0/2.0 /S /24HRS)											PCN 3	DMSP														
19	232282Z	22.3N 155.3E	SAT	(T 0/2.0 /S /24HRS)											PCN 3	DMSP														
20	232282Z	22.4N 155.0E	SAT	(IH DATA											PCN 3	DMSP														
21	232322Z	22.8N 156.1E	SAT	(T 0/2.5 /W0.5/24HRS)											NOAA-3		(CONF 01)													
22	240300Z	22.4N 155.4E	P	10 10 700	20 25 340										40 20 40	20 999 308 25	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	
23	241109Z	23.1N 156.2E	SAT	(IH DATA											PCN 5	DMSP														
24	241109Z	22.7N 154.9E	SAT	(IH DATA											PCN 3	DMSP														
25	241947Z	22.9N 153.9E	SAT	(T 0/2.5 /W0.5/24HRS)											PCN 5	DMSP														
26	242209Z	23.0N 153.5E	SAT	(T 0/2.5 /W0.5/24HRS)											PCN 5	DMSP														
27	242209Z	23.4N 154.0E	SAT	(IH DATA											PCN 3	DMSP														
28	242222Z	23.4N 154.0E	SAT	(T 0/2.5 /W0.5/24HRS)											NOAA-3		(CONF 01)													
29	250830Z	23.6N 154.0E	SAT	(IH DATA											PCN 2	DMSP														
30	250911Z	23.9N 155.0E	SAT	(IH DATA											NOAA-3		(CONF 02)													
31	251051Z	24.3N 153.9E	SAT	(IH DATA											PCN 6	DMSP														
32	251051Z	24.7N 153.9E	SAT	(IH DATA											PCN 5	DMSP														
33	251650Z	23.9N 153.2E	P	10 10 700	360 40 260										50	-	-	-	997	307 10 15	-	-	-	-	-	-	-	-	3	
34	252000Z	24.0N 153.0E	P	5 5 700	150 45 250										70	996 306 10 14	-	-	-	-	-	-	-	-	-	-	-	-	3	
35	252151Z	24.5N 152.6E	SAT	(T 0/4.0/4.0/W1.5/24HRS)											PCN 3	DMSP														
36	252151Z	24.5N 152.7E	SAT	(T 0/3.5/3.5/W0.1/0/24HRS)											PCN 3	DMSP														
37	252317Z	24.2N 152.6E	SAT	(T 0/4.0/4.0/W0.5/24HRS)											NOAA-3		(CONF 01)													
38	260132Z	24.6N 152.3E	SAT	(IH DATA											PCN 3	DMSP														
39	261006Z	25.0N 152.2E	SAT	(IH DATA											NOAA-3		(CONF 01)													
40	261033Z	24.6N 151.7E	SAT	(IH DATA											PCN 4	DMSP														
41	261033Z	24.6N 151.8E	SAT	(IH DATA											PCN 5	DMSP														
42	261502Z	24.5N 151.9E	P	5 5 700	40 70 270										15	-	-	-	984	296 18 12	-	-	-	-	-	-	-	3		
43	262058Z	24.7N 151.4E	SAT	(IH DATA											PCN 5	DMSP														
44	262133Z	24.7N 150.9E	SAT	(T 0/5.4/5.4/W1.0/24HRS)											PCN 3	DMSP														
45	262134Z	24.6N 150.4E	SAT	(T 0/5.4/5.4/W0.5/24HRS)											PCN 3	DMSP														
46	262217Z	24.8N 150.9E	SAT	(T 0/5.0/5.0/W0.1/0/24HRS)											NOAA-3		(CONF 01)													
47	270114Z	24.9N 150.9E	SAT	(IH DATA											PCN 3	DMSP														
48	270231Z	25.2N 150.8E	P	2U 3 700	40 60 350										18	70 330 30 978	292 17 14	CTHC												
49	270441Z	25.2N 150.0E	SAT	(IH DATA											PCN 5	DMSP														
50	270941Z	25.4N 150.6E	SAT	(IH DATA											PCN 5	DMSP														
51	271014Z	25.6N 150.7E	SAT	(IH DATA											PCN 5	DMSP														
52	271156Z	25.2N 150.4E	SAT	(IH DATA											PCN 5	DMSP														
53	271156Z	25.3N 150.6E	SAT	(IH DATA											PCN 5	DMSP														
54	271555Z	25.7N 150.3E	SAT	(IH DATA											PCN 5	DMSP														
55	271827Z	26.3N 150.5E	P	1 5 700	330 65 240										40	-	-	-	970	285 20 11	CING								1	
56	272043Z	26.3N 151.0E	SAT	(T 0/4.0/4.5/W0.5/24HRS)											PCN 3	DMSP														
57	272256Z	26.2N 150.7E	SAT	(T 0/4.0/4.5/W0.5/24HRS)											PCN 3	DMSP														
58	272256Z	26.2N 150.8E	SAT	(IH DATA											PCN 3	DMSP														
59	272311Z	26.0N 150.4E	SAT	(T 0/5.0/5.0/W0.1/0/24HRS)											NOAA-3		(CONF 02)													
60	280033Z	26.5N 150.5E	SAT	(IH DATA											PCN 3	DMSP														
61	280500Z	26.9N 150.3E	P	10 5 700	290 65 190										50	60 190 60 968	283 16 16	-	-	-	-	-	-	-	-	-	-	-	-	8
62	280925Z	28.1N 150.9E	SAT	(IH DATA											PCN 6	DMSP														
63	280925Z	27.6N 150.5E	SAT	(IH DATA											PCN 4	DMSP														
64	281138Z	27.8N 150.5E	SAT	(IH DATA											PCN 5	DMSP														
65	281138Z	27.8N 150.5E	SAT	(IH DATA											PCN 5	DMSP					</td									

TYPHOON BESS  
FIX POSITIONS FOR CYCLONE NO. 27  
0600Z 08 OCT TO 0600Z 14 OCT

FIX NO.	TIME	POSII.	FIX ACCURACY	FIX CAT	FLT LVL	WIND DIA	SFC WIND DIA	MIN YDOWH	LVL	EYE HGT	MIN FLI TI/TO FORM	ORIENT TATION	EYE DIA	PUSIT OF KAUAI	MSN NMBR
1	052258Z	10.0N 139.0E	SAT	(T1.5/1.5 /00.5/24HRS)	NOAA-3	(CONF 01)									
2	061322	11.0N 146.0E	SAT	(IH DATA )	NOAA-3	(CONF 03)									
3	062335Z	10.0N 133.7E	SAT	(T1.0/1.0 / / HRS)	PCN 5	DMSR									
4*	062353Z	10.5N 132.4E	SAT	(T2.0/2.0 /00.5/24HRS)	NOAA-3	(CONF 01)									
5	070131Z	10.0N 143.2E	SAT	(IH DATA )	PCN 5	DMSR									
6	071034Z	11.0N 139.0E	SAT	(IH DATA )	NOAA-3	(CONF 01)									
7	071216Z	10.6N 136.5E	SAT	(IH DATA )	PCN 5	DMSR									
8	072124Z	11.0N 136.0E	SAT	(T1.5/1.5 /00.5/24HRS)	PCN 5	DMSR									
9	072253Z	11.0N 136.0E	SAT	(T2.5/2.5 /00.5/24HRS)	NOAA-3	(CONF 02)									
10	072316Z	12.0N 136.5E	SAT	(IH DATA )	PCN 5	DMSR									
11	072316Z	11.8N 135.5E	SAT	(T1.5/1.5 / / HRS)	PCN 5	DMSR									
12	080254Z	11.9N 135.9E	SAT	(IH DATA )	PCN 5	DMSR									
13	080400Z	11.9N 135.3E	P 3	3 1500 140 30 70 30 30 30 20 999 - 25 25 - - - -											4
14	080920Z	12.0N 134.1E	P 2	2 700 140 45 40 100 35 70 100 1003 308 10 11 - - - -											3
15	081014Z	13.0N 133.0E	SAT	(IH DATA )	PCN 5	DMSR									
16	081015Z	12.1N 133.6E	SAT	(IH DATA )	PCN 6	DMSR									
17	081127Z	13.2N 133.5E	SAT	(IH DATA )	NOAA-3	(CONF 02)									
18	081158Z	12.3N 133.4E	SAT	(IH DATA )	PCN 5	DMSR									
19	081535Z	12.6N 133.2E	SAT	(IH DATA )	PCN 5	DMSR									
20	081700Z	12.7N 131.6E	P 2	5 700 320 20 100 20 - - - 1002 307 8 8 CTMC 35											
21	082058Z	13.0N 130.2E	P 2	2 700 320 30 120 30 - - - 999 308 10 9 CTMC 30											2
22	082116Z	13.5N 130.7E	SAT	(IH DATA )	PCN 5	DMSR									
23	082258Z	15.4N 132.3E	SAT	(T2.5/2.5 /01.0/24HRS)	PCN 5	DMSR									
24	082300Z	15.7N 131.8E	SAT	(T2.0/2.0 /00.5/24HRS)	PCN 5	DMSR									
25	082307Z	13.5N 130.6E	SAT	(T2.5/2.5 /S /24HRS)	NOAA-3	(CONF 02)									
26	090235Z	16.0N 130.7E	SAT	(IH DATA )	PCN 5	DMSR									
27	090235Z	16.4N 131.1E	SAT	(IH DATA )	PCN 5	DMSR									
28	090320Z	16.0N 130.3E	P 15	10 700 170 50 120 57 35 120 30 998 306 11 10 ELIP SE-NW 40X15											3
29	090302Z	16.2N 128.6E	P 10	40 700 - - - 40 340 72 995 305 12 - - - -											3
30	090559Z	16.7N 128.1E	SAT	(IH DATA )	PCN 5	DMSR									
31	090559Z	16.1N 128.4E	SAT	(IH DATA )	PCN 5	DMSR									
32	091139Z	16.3N 127.6E	SAT	(IH DATA )	PCN 5	DMSR									
33	091139Z	15.4N 127.6E	SAT	(IH DATA )	PCN 5	DMSR									
34	091225Z	16.0N 128.0E	SAT	(IH DATA )	NOAA-3	(CONF 02)									
35	091517Z	16.3N 126.8E	SAT	(IH DATA )	PCN 5	DMSR									
36	091517Z	16.2N 126.7E	SAT	(IH DATA )	PCN 5	DMSR									
37	091730Z	15.9N 127.6E	P 5	700 190 30 90 47 - - - 987 297 13 - - - -											4
38	092244Z	16.7N 126.5E	P 5	700 160 60 100 5 80 100 986 298 13 - - - -											4
39	100021Z	16.6N 126.4E	SAT	(T3.0/3.0 /01.0/24HRS)	PCN 3	DMSR									
40	100452Z	16.7N 125.9E	P 3	1 700 140 60 70 85 65 70 100 985 297 13 13 - - - -											5
41	100538Z	15.6N 126.3E	SAT	(T3.0/3.0 / / HRS)	PCN 5	DMSR									
42	100907Z	17.2N 125.2E	P 2	700 160 65 50 50 75 130 70 980 293 14 12 CTMC 20											5
43	101303Z	17.1N 124.6E	SAT	(IH DATA )	PCN 5	DMSR									
44	101319Z	16.0N 124.0E	SAT	(IH DATA )	NOAA-3	(CONF 01)									
45	101452Z	17.6N 123.5E	P 10	25 700 190 35 90 20 - - - 981 288 17 15 - - - -											6
46	102227Z	17.5N 122.7E	SAT	(T5.0/5.0 /02.0/24HRS)	PCN 3	DMSR									
47	102227Z	17.1N 122.5E	SAT	(T5.0/5.0 / / HRS)	PCN 2	DMSR									
48	102227Z	17.5N 122.5E	SAT	(T3.5/3.5 /00.5/18HRS)	PCN 4	DMSR									
49	110003Z	16.1N 122.1E	SAT	(IH DATA )	PCN 3	DMSR									
50	110003Z	16.0N 122.2E	SAT	(T5.0/5.0 / / HRS)	PCN 3	DMSR									
51	110032Z	17.8N 122.2E	SAT	(IH DATA )	PCN 2	DMSR									
52	110136Z	18.0N 121.3E	SAT	(T4.0/4.0 /01.5/24HRS)	NOAA-3	(CONF 01)									
53	110340Z	17.9N 121.0E	SAT	(IH DATA )	PCN 5	DMSR									
54	110340Z	17.7N 121.3E	SAT	(IH DATA )	PCN 2	DMSR									
55	110340Z	14.0N 121.9E	SAT	(IH DATA )	PCN 4	DMSR									
56	111110Z	15.5N 119.9E	SAT	(IH DATA )	PCN 6	DMSR									
57	111110Z	16.5N 119.4E	SAT	(IH DATA )	PCN 6	DMSR									
58	111221Z	14.0N 120.0E	SAT	(IH DATA )	NOAA-3	(CONF 02)									
59	111244Z	16.6N 119.6E	SAT	(IH DATA )	PCN 3	DMSR									
60	111621Z	14.0N 119.1E	SAT	(IH DATA )	PCN 5	DMSR									
61	111652Z	14.2N 119.5E	P 2	700 230 60 170 50 - - - 982 293 13 13 - - - -											7
62	112212Z	19.0N 118.8E	SAT	(IH DATA )	PCN 5	DMSR									
63	112232Z	18.0N 118.5E	P 2	1 700 130 75 30 80 5 30 980 293 13 13 - - - -											7
64	112342Z	18.0N 118.0E	SAT	(T3.5/4.5 /01.5/24HRS)	PCN 5	DMSR									
65	120036Z	19.0N 118.0E	SAT	(T3.5/4.5 /00.5/24HRS)	NOAA-3	(CONF 01)									
66	120126Z	14.3N 119.0E	SAT	(T4.5/4.5 /00.5/24HRS)	PCN 5	DMSR									
67	120312Z	17.1N 117.8E	SAT	(IH DATA )	PCN 3	DMSR									
68	120312Z	17.0N 118.4E	SAT	(IH DATA )	PCN 5	DMSR									
69	120544Z	19.4N 117.1E	P 5	3 700 230 75 120 40 5 120 45 982 294 13 13 - - - -											8
70	121055Z	19.0N 117.5E	SAT	(IH DATA )	PCN 6	DMSR									
71	121055Z	19.8N 116.9E	SAT	(IH DATA )	PCN 6	DMSR									
72	121055Z	17.8N 116.3E	SAT	(IH DATA )	PCN 6	DMSR									
73	121226Z	19.0N 117.3E	SAT	(IH DATA )	PCN 5	DMSR									
74	121226Z	19.3N 116.8E	SAT	(IH DATA )	PCN 5	DMSR									
75	121316Z	19.5N 114.8E	SAT	(IH DATA )	NOAA-3	(CONF 02)									
76	121602Z	19.4N 116.1E	SAT	(IH DATA )	PCN 5	DMSR									
77	121602Z	19.2N 114.5E	SAT	(IH DATA )	PCN 5	DMSR									
78	121602Z	20.0N 114.0E	SAT	(IH DATA )	PCN 5	DMSR									
79	122338Z	19.2N 112.5E	SAT	(IH DATA )	PCN 5	DMSR									
80	122338Z	20.0N 112.9E	SAT	(T2.5/3.0 /W2.0/24HRS)	PCN 5	DMSR									
81	130108Z	19.1N 113.2E	SAT	(T3.0/3.0 / / HRS)	PCN 3	DMSR									
82	130108Z	15.9N 112.2E	SAT	(IH DATA )	PCN 3	DMSR									
83	130130Z	19.2N 111.1E	SAT	(T2.0/3.0 /W1.0/24HRS)	NOAA-3	(CONF 02)									
84	130444Z	19.0N 112.6E	SAT	(IH DATA )	PCN 3	DMSR									
85	130444Z	18.9N 112.6E	SAT	(IH DATA )	PCN 3	DMSR									
86	131617Z	20.2N 110.0E	SAT	(IH DATA )	NOAA-3	(CONF 02)									
87	131221Z	19.3N 110.6E	SAT	(IH DATA )	PCN 6	DMSR									
88	131221Z	19.0N 110.0E	SAT	(IH DATA )	PCN 6	DMSR									
89	131349Z	19.0N 109.9E	SAT	(IH DATA )	PCN 5	DMSR									
90	131725Z	19.0N 108.2E	SAT	(IH DATA )	PCN 5	DMSR									
91	132333Z	19.1N 107.2E	SAT	(T1.0/1.5 /W1.0/24HRS)	PCN 5	DMSR									
92	140053Z	12.8N 133.5E	SAT	(T2.0/2.0 /00.5/24HRS)	NOAA-3	(CONF 02)									
93	140050Z	19.1N 106.6E	SAT	(T1.5/2.5 /W1.5/24HRS)	PCN 5	DMSR									

TYPHOON CARMEN  
FIX POSITIONS FOR CYCLONE NO. 28  
1200Z 14 OCT TO 1200Z 19 OCT

FIX NO.	TIME	POSII	FIX CAT NAV-MET	MAX OBS FLT LVL WIND DIR VEL BRG RNG	MAX OBS SFC WIND MIN 700MB VEL BRG RNG	OBS LVL	MIN SLP	MAX OBS FLT HGT	EYE ORIENT- TATIOM	EYE DIA	POSI T OF RADAR	MSN NM8H	
1	122346Z	12.2N 132.8E	SAT	(11.0/1.0 / / HRS)	PCN 5	UMSP							
2	130302Z	12.2N 132.4E	SAT	(11.0 DATA )	PCN 5	UMSP							
3	131139Z	11.5N 132.9E	SAT	(11.0 DATA )	PCN 6	UMSP							
4	131157Z	11.2N 145.5E	SAT	(11.0 DATA )	NOAA-3								
5	131208Z	11.5N 132.3E	SAT	(11.0 DATA )	PCN 6	UMSP							
6	131544Z	11.5N 133.0E	SAT	(11.0 DATA )	PCN 6	UMSP							
7	132141Z	11.7N 131.6E	SAT	(11.5/1.5 / D0.5/22HRS)	PCN 5	UMSP							
8	132308Z	11.5N 133.1E	SAT	(11.0/1.0 / / HRS)	PCN 5	UMSP							
9	132308Z	11.7N 131.6E	SAT	(11.0 DATA )	PCN 5	UMSP							
10	140244Z	12.5N 131.5E	SAT	(11.0 DATA )	PCN 5	UMSP							
11	141024Z	11.7N 130.3E	SAT	(11.0 DATA )	PCN 6	UMSP							
12	141149Z	12.1N 130.2E	SAT	(11.0 DATA )	PCN 5	UMSP							
13	141525Z	12.0N 129.0E	SAT	(11.0 DATA )	PCN 6	UMSP							
14	141525Z	12.2N 129.8E	SAT	(11.0 DATA )	PCN 5	UMSP							
15	142307Z	12.4N 129.0E	SAT	(11.0 DATA )	PCN 6	UMSP							
16	150031Z	11.6N 129.8E	SAT	(12.5/2.5 / / HRS)	PCN 5	UMSP							
17	150031Z	11.8N 129.1E	SAT	(13.0/3.0 / D1.5/27HRS)	PCN 5	UMSP							
18	150252Z	12.5N 129.0E	SAT	(11.0 DATA )	PCN 5	UMSP							
19	151009Z	13.4N 126.9E	SAT	(11.0 DATA )	PCN 5	UMSP							
20	151228Z	13.4N 125.3E	P	5 20 700 - - -	993	303	14	-	-	-		2	
21	151507Z	14.4N 125.7E	SAT	(11.0 DATA )	PCN 5	UMSP							
22	151807Z	14.7N 125.2E	SAT	(11.0 DATA )	PCN 5	UMSP							
23	151528Z	14.3N 125.0E	P	5 5 700 110 55 30 80 - - -	985	300	12	8	-	-			
24	152209Z	14.7N 123.8E	LHUR	- 1450/									
25	152209Z	14.6N 123.6E	SAT	(11.0 DATA )	PCN 6	UMSP					13.1N 123.7E		
26	160013Z	15.4N 123.7E	SAT	(14.5/4.5 / / HRS)	PCN 1	UMSP							
27	160013Z	15.5N 123.8E	SAT	(14.5/4.5 / D1.5/24HRS)	PCN 1	UMSP							
28	160210Z	15.5N 123.4E	LHUR	- CIRCULAR EYE 40 NM DIAM, 90 PERCENT WALL CLOUD							18.1N 120.5E		
29	160300Z	15.6N 123.1E	LHUR	- ELLIPTICAL EYE NW/EVE, 60 PERCENT WALL CLOUD							18.1N 120.5E		
30	160349Z	15.4N 123.6E	SAT	(15.0/5.0 / / HRS)	PCN 1	UMSP							
31	160400Z	15.6N 122.9E	LHUR	- ELLIPTICAL EYE, 50 PERCENT WALL CLOUD									
32	160449Z	15.4N 122.9E	P	5 5 700 170 62 100 80 60 100 110 974 289 14 10 ELIP N-S 50X40							18.1N 120.5E		
33	160710Z	16.3N 122.7E	LHUR	- CIRCULAR EYE, 40 NM DIAM, 80 PERCENT WALL CLOUD							18.1N 120.5E		
34	160810Z	16.6N 122.6E	LHUR	- ELLIPTICAL EYE, NFG WALL CLOUD							18.1N 120.5E		
35	160910Z	16.3N 122.3E	LHUR	- POSSIBLE EYE, HEAVY ATTENUATION							18.1N 120.5E		
36	161131Z	17.0N 121.8E	SAT	(11.0 DATA )	1	NOAA-3	(CONF 02)						
37	161135Z	16.4N 121.1E	SAT	(11.0 DATA )	1	PCN 4	UMSP						
38	161254Z	16.3N 121.9E	SAT	(11.0 DATA )	1	PCN 6	UMSP						
39	161254Z	16.4N 121.4E	SAT	(11.0 DATA )	1	PCN 5	UMSP						
40	161630Z	16.9N 120.1E	SAT	(11.0 DATA )	1	PCN 1	UMSP						
41	161930Z	17.4N 119.8E	LHUR	- CIRCULAR EYE, 30 NM DIAM, 60 PERCENT WALL CLOUD							16.6N 120.3E		
42	162237Z	17.3N 119.1E	SAT	(14.0/5.0 / D1.0/24HRS)	PCN 1	UMSP							
43	162237Z	18.0N 118.6E	SAT	(11.0 DATA )	1	PCN 3	UMSP						
44	162237Z	17.8N 118.4E	SAT	(14.5/5.0 / W0.5/19HRS)	PCN 1	UMSP							
45	162355Z	16.5N 118.6E	SAT	(12.5/3.5 / W1.0/24HRS)	PCN 5	UMSP							
46	162355Z	16.9N 118.3E	SAT	(14.5/4.5 / W0.5/24HRS)	PCN 1	UMSP							
47	170329Z	18.4N 117.2E	SAT	(15.0/5.5 / D0.5/24HRS)	PCN 1	UMSP							
48	170330Z	18.4N 117.8E	SAT	(12.5/3.5 / W1.0/24HRS)	PCN 3	UMSP							
49	170330Z	18.4N 117.7E	SAT	(11.0 DATA )	1	PCN 3	UMSP						
50	170330Z	18.4N 117.9E	SAT	(11.0 DATA )	1	PCN 1	UMSP						
51	170330Z	18.1N 117.6E	SAT	(11.0 DATA )	1	PCN 3	UMSP						
52	170531Z	18.4N 117.5E	P	3 5 700 170 45 70 100 50 70 85 980 292 14 13 - - -									
53	170948Z	18.6N 116.9E	P	5 5 700 130 48 50 60 55 50 80 979 291 14 12 ELIP N-S 70X40									
54	171120Z	18.7N 116.8E	SAT	(11.0 DATA )	1	PCN 4	UMSP						
55	171120Z	18.5N 116.8E	SAT	(11.0 DATA )	1	PCN 2	UMSP						
56	171236Z	18.9N 116.5E	SAT	(11.0 DATA )	1	PCN 1	UMSP						
57	171236Z	19.2N 116.4E	SAT	(11.0 DATA )	1	PCN 1	UMSP						
58	171236Z	18.9N 116.6E	SAT	(11.0 DATA )	1	PCN 1	UMSP						
59	171243Z	20.0N 117.0E	SAT	(11.0 DATA )	1	NOAA-3	(CONF 01)						
60	171011Z	19.0N 116.0E	SAT	(11.0 DATA )	1	PCN 2	UMSP						
61	171611Z	19.6N 116.2E	SAT	(11.0 DATA )	1	PCN 6	UMSP						
62	171611Z	19.3N 116.1E	SAT	(11.0 DATA )	1	PCN 3	UMSP						
63	171611Z	19.1N 115.8E	SAT	(11.0 DATA )	1	PCN 5	UMSP						
64	171804Z	19.8N 115.9E	LHUR	- /////									
65	172221Z	19.7N 115.6E	SAT	(11.0 DATA )	1	PCN 3	UMSP					22.3N 114.2E	
66	172221Z	19.4N 115.3E	SAT	(15.5/5.5 / D1.0/24HRS)	PCN 2	UMSP							
67	180000Z	20.2N 115.3E	LHUR	- 2094/									
68	180200Z	20.1N 114.7E	LHUR	- 35//									
69	180300Z	20.1N 114.8E	LHUR	- /////									
70	180311Z	20.1N 115.4E	SAT	(14.5/4.5 / D0.5/27HRS)	PCN 3	UMSP							
71	180311Z	19.9N 115.3E	SAT	(15.0/5.0 / D0.5/27HRS)	PCN 1	UMSP							
72	180311Z	19.9N 115.5E	SAT	(11.0 DATA )	1	PCN 3	UMSP						
73	180400Z	20.3N 114.9E	LHUR	- /////									
74	180600Z	20.5N 115.1E	LHUR	- /////									
75	180700Z	20.3N 115.0E	LHUR	- /////									
76	180800Z	20.3N 114.9E	LHUR	- /////									
77	180900Z	20.3N 114.9E	LHUR	- /////									
78	181000Z	20.4N 114.8E	LHUR	- 2094/									
79	181100Z	20.5N 114.8E	LHUR	- 2094/									
80	181104Z	20.0N 114.2E	SAT	(11.0 DATA )	1	PCN 2	UMSP						
81	181104Z	20.3N 114.8E	SAT	(11.0 DATA )	1	PCN 2	UMSP						
82	181104Z	20.3N 114.6E	SAT	(11.0 DATA )	1	PCN 2	UMSP						
83	181200Z	20.5N 114.5E	LHUR	- 20973									
84	181300Z	20.5N 114.5E	LHUR	- 20974									
85	181400Z	20.5N 114.6E	LHUR	- 21914									
86	181500Z	20.5N 114.5E	LHUR	- 21923									
87	181552Z	20.6N 114.5E	SAT	(11.0 DATA )	1	PCN 1	UMSP						
88	181552Z	20.6N 114.3E	SAT	(11.0 DATA )	1	PCN 1	UMSP						
89	181552Z	20.6N 114.0E	SAT	(11.0 DATA )	1	PCN 3	UMSP						
90	181600Z	20.6N 114.4E	LHUR	- 21923									
91	181700Z	20.6N 114.3E	LHUR	- 21923									
92	181800Z	20.7N 114.2E	LHUR	- 21923									
93	181900Z	20.8N 114.2E	LHUR	- 21923									
94	182000Z	20.9N 114.2E	LHUR	- 20983									
95	182300Z	21.2N 113.8E	LHUR	- 20923									
96	182348Z	21.4N 114.7E	SAT	(11.0 DATA )	1	PCN 5	UMSP						
97	190019Z	20.5N 112.8E	SAT	(14.0/4.0 / / 23HRS)	NOAA-3	(CONF 01)							
98	190100Z	21.2N 113.0E	LHUR	- 20913									
99	190100Z	21.1N 113.4E	SAT	(15.5/5.5 / S / 27HRS)	PCN 3	UMSP							
100	190433Z	20.5N 113.0E	SAT	(11.0 DATA )	1	PCN 1	UMSP						

TYPHOON CARMEN  
FIX POSITIONS FOR CYCLONE NO. 28  
1200Z 14 OCT TO 1200Z 19 OCT

FIX NO.	TIME	POSIT	FIX CAT	ACCHY	FIX LVL	FLT LVL	MINU	MAX OBS	OBS	MIN	FLT	POSIT OF NAVAR.	
			NAV-MET	LVL	DIR	VEL	BNG	RNG	SFC-IND	MIN	100MB	LVL	
									SLP	HGT	T1/T0	EYE	
											FORM	ORIEN-	
											TATION	EYE	
											VIA	MSN NMNR	
101	190434Z	21.4N 113.3E	SAT	(IR) DATA				PCN 3	DMSP				
102	190500Z	21.4N 112.9E	LRHM	-	20913								22.3N 114.2E
103	190700Z	21.4N 112.7E	LRHM	-	20913								22.3N 114.2E
104	191231Z	21.3N 111.9E	SAT	(IR) DATA				PCN 4	DMSP				
105	191308Z	22.0N 112.0E	SAT	(IR) DATA				NOAA-3	(CONF v1)				

TYPHON DELLA  
FIX POSITIONS FOR CYCLONE NO. 29  
0000Z 21 OCT TO 0000Z 27 OCT

TYPHOON DELLA  
FIX POSITIONS FOR CYCLONE NO. 29  
0000Z 21 OCT TO 0000Z 27 OCT

FIX NO.	TIME	POSII	FIX ACCY	FIX CAT	MAX OBS NAV-MET	MAX OBS LVL	SFC WIND DIR VEL BMG RNG	OBS VEL BMG RNG	MIN SLP	FLT MGT	POSIT OF UAVAR	MSN NM8R	
87	232328Z	16.3N 119.5E	SAT	(IR DATA )	PCN 1	DMSR							
88	240024Z	16.0N 119.2E	SAT	(15.0/5.0 /00.5/23HRS)	NOAA-3	(CONF 02)							
89	240110Z	16.1N 119.7E	SAT	(16.0/6.0 /02.0/27HRS)	PCN 1	DMSR							
90	240110Z	16.1N 119.7E	SAT	(15.0/5.0 / / HRS)	PCN 1	DMSR							
91	240301Z	16.0N 119.3E	SAT	(15.0/5.0 /00.5/27HRS)	PCN 1	DMSR							
92	240301Z	16.0N 119.4E	SAT	(IR DATA )	PCN 1	DMSR							
93	240700Z	17.9N 119.1E	LMDR	- CIRCULAR EYE OPEN N, 13 NM DIAM, 60 PERCENT WALL CLOUD							16.6N 120.3E		
94	240800Z	16.1N 118.9E	LMDR	- CIRCULAR EYE OPEN N, 18 NM DIAM, 60 PERCENT WALL CLOUD							16.6N 120.3E		
95	240802Z	16.1N 118.7E	P	3 700 140 75 30 90 25 967 283 10 14	CTRL						18		
96	240900Z	17.9N 118.8E	LMDR	- CIRCULAR EYE OPEN N, 18 NM DIAM, 60 PERCENT WALL CLOUD							16.6N 120.3E		
97	241000Z	17.9N 118.5E	LMDR	- CIRCULAR EYE >25 NM DIAM, 60 PERCENT WALL CLOUD							16.6N 120.3E		
98	241100Z	17.9N 118.4E	LMDR	- CIRCULAR EYE >25 NM DIAM, 60 PERCENT WALL CLOUD							16.6N 120.3E		
99	241113Z	17.9N 118.1E	SAT	(IR DATA )	J	PCN 3	DMSR						
100	241114Z	16.0N 118.2E	SAT	(IR DATA )	J	PCN 3	DMSR						
101	241200Z	17.9N 118.1E	LMDR	- CIRCULAR EYE OPEN N, 23 NM DIAM, 60 PERCENT WALL CLOUD							16.6N 120.3E		
102	241202Z	17.8N 118.0E	LMDR	- CIRCULAR EYE OPEN N, 23 NM DIAM, 60 PERCENT WALL CLOUD							16.6N 120.3E		
103	241351Z	17.8N 117.8E	SAT	(IR DATA )	PCN 1	DMSR							
104	241402Z	17.9N 117.6E	P	J 4 700 90 85 240 17 - - - 967 281 17 11	CTRL						20		
105	241452Z	16.1N 117.4E	SAT	(IR DATA )	J	PCN 3	DMSR						
106	241543Z	17.9N 117.3E	SAT	(IR DATA )	J	PCN 1	DMSR						
107	242152Z	17.9N 116.3E	SAT	(15.0/5.0 /00.5/24HRS)	PCN 1	DMSR							
108	250051Z	16.0N 115.7E	SAT	(16.0/6.0 /5 /24HRS)	PCN 1	DMSR							
109	250052Z	16.0N 115.7E	SAT	(15.0/5.0 /5 /24HRS)	PCN 1	DMSR							
110	250134Z	17.8N 115.0E	SAT	(15.0/5.0 /5 /24HRS)	NOAA-3	(CONF 01)							
111	250242Z	16.0N 115.1E	SAT	(IR DATA )	PCN 1	DMSR							
112	250556Z	16.2N 114.4E	P	3 - 700 110 90 90 60 100 30 12 958 275 15 11	CONC	-	-					15	
113	251058Z	16.6N 113.3E	SAT	(IR DATA )	J	PCN 2	DMSR						
114	251058Z	16.6N 113.3E	SAT	(IR DATA )	J	PCN 1	DMSR						
115	251058Z	16.3N 113.3E	SAT	(IR DATA )	J	PCN 1	DMSR						
116	251333Z	16.3N 113.0E	SAT	(IR DATA )	J	PCN 1	DMSR						
117	251706Z	16.6N 112.3E	SAT	(IR DATA )	J	PCN 2	DMSR						
118	252341Z	16.9N 111.6E	SAT	(16.0/6.0 /5 /24HRS)	PCN 5	DMSR							
119	260033Z	19.0N 110.5E	SAT	(15.0/5.0 /5 /24HRS)	PCN 1	DMSR							
120	260405Z	19.2N 109.7E	SAT	(IR DATA )	J	PCN 5	DMSR						
121	261225Z	19.6N 108.3E	SAT	(IR DATA )	J	PCN 4	DMSR						
122	261226Z	19.5N 113.1E	SAT	(IR DATA )	J	NOAA-3	(CONF 01)						
123	261315Z	20.1N 108.1E	SAT	(IR DATA )	J	PCN 1	DMSR						
124	261336Z	20.0N 107.0E	SAT	(IR DATA )	J	NOAA-3	(CONF 01)						
125	261467Z	19.5N 107.3E	SAT	(IR DATA )	J	PCN 3	DMSR						
126	262326Z	19.6N 106.1E	SAT	(IR DATA )	J	PCN 5	DMSR						

TYPHOON ELAINE  
FIX POSITIONS FOR CYCLONE NO. 30  
0600Z 24 OCT TO 0600Z 31 OCT

FIX NO.	TIME	POSII	FIX ACCY	FIX CAT	MAX OBS NAV-MET	MAX OBS LVL	SFC WIND DIR VEL BMG RNG	OBS VEL BMG RNG	MIN SLP	FLT MGT	POSIT OF UAVAR	MSN NM8R	
1	212223Z	11.1N 147.5E	SAT	(16.0/6.0 /5 / HRS)	PCN 5	DMSR							
2	220157Z	12.1N 147.5E	SAT	(IR DATA )	PCN 5	DMSR							
3	221003Z	13.8N 148.3E	SAT	(IR DATA )	PCN 6	DMSR							
4	221105Z	14.2N 147.7E	SAT	(IR DATA )	PCN 6	DMSR							
5	221438Z	14.5N 147.6E	SAT	(IR DATA )	PCN 6	DMSR							
6	222052Z	15.0N 146.9E	SAT	(15.5/1.5 /00.5/24HRS)	PCN 5	DMSR							
7	222205Z	15.1N 146.8E	SAT	(16.0/6.0 /5 / HRS)	PCN 5	DMSR							
8	222315Z	15.1N 146.1E	SAT	(15.5/1.5 /00.5/24HRS)	NOAA-3	(CONF 02)							
9	230138Z	15.8N 146.1E	SAT	(IR DATA )	J	PCN 5	DMSR						
10	230447Z	16.4N 146.6E	SAT	(IR DATA )	J	PCN 6	DMSR						
11	231420Z	17.0N 143.3E	SAT	(IR DATA )	J	PCN 6	DMSR						
12	231420Z	17.4N 142.9E	SAT	(IR DATA )	J	PCN 6	DMSR						
13	232049Z	17.3N 141.8E	SAT	(12.0/2.0 /00.5/23HRS)	PCN 3	DMSR							
14	232428Z	17.1N 141.3E	SAT	(IR DATA )	J	PCN 5	DMSR						
15	232328Z	16.0N 141.5E	SAT	(12.0/2.0 /01.0/23HRS)	PCN 5	DMSR							
16	232328Z	16.8N 141.7E	SAT	(15.5/1.5 / / HRS)	PCN 5	DMSR							
17	240301Z	17.0N 141.1E	SAT	(IR DATA )	J	PCN 5	DMSR						
18	240301Z	17.9N 140.0E	SAT	(IR DATA )	J	PCN 5	DMSR						
19	240558Z	17.9N 140.2E	P	5 2 700 340 25 250 30 240 40 994 308 13 12	CTRL						10		
20	240855Z	18.1N 140.0E	P	5 2 700 140 20 50 20 35 30 40 994 308 13 12	CTRL						15		
21	240932Z	17.9N 139.8E	SAT	(IR DATA )	J	PCN 5	DMSR						
22	241210Z	18.1N 139.7E	SAT	(IR DATA )	J	PCN 5	DMSR						
23	241210Z	18.7N 139.5E	SAT	(IR DATA )	J	PCN 5	DMSR						
24	241230Z	17.0N 139.7E	P	5 2 700 360 25 280 40 - - - 1001 308 14 12	CTRL						15		
25	241543Z	18.5N 139.0E	SAT	(IR DATA )	J	PCN 5	DMSR						
26	241543Z	18.5N 138.4E	SAT	(IR DATA )	J	PCN 5	DMSR						
27	242115Z	18.5N 137.9E	SAT	(IR DATA )	J	PCN 5	DMSR						
28	242310Z	18.1N 137.5E	SAT	(13.0/3.0 /01.0/23HRS)	PCN 3	DMSR							
29	242310Z	17.7N 137.4E	SAT	(12.5/2.5 /00.5/24HRS)	PCN 5	DMSR							
30	242310Z	18.3N 137.7E	SAT	(12.0/2.0 /00.5/24HRS)	PCN 5	DMSR							
31	242338Z	17.5N 138.1E	SAT	(13.0/3.0 /01.0/23HRS)	NOAA-3	(CONF 01)							
32	250424Z	17.6N 137.1E	SAT	(IR DATA )	J	PCN 5	DMSR						
33	250424Z	16.9N 137.4E	SAT	(IR DATA )	J	PCN 5	DMSR						
34	250908Z	17.3N 135.9E	P	10 700 120 30 150 90 35 150 120 994 302 12 12	E1IP E-W	18X15						3	
35	251029Z	19.0N 133.9E	SAT	(IR DATA )	J	NOAA-3	(CONF 01)						
36	251058Z	17.4N 135.9E	SAT	(IR DATA )	J	PCN 5	DMSR						
37	251058Z	17.9N 135.6E	SAT	(IR DATA )	J	PCN 3	DMSR						
38	251058Z	17.6N 135.7E	SAT	(IR DATA )	J	PCN 6	DMSR						
39	251151Z	17.6N 135.5E	SAT	(IR DATA )	J	PCN 5	DMSR						
40	251151Z	17.9N 135.4E	SAT	(IR DATA )	J	PCN 3	DMSR						
41	251524Z	17.6N 134.7E	SAT	(IR DATA )	J	PCN 5	DMSR						
42	251525Z	17.5N 134.6E	SAT	(IR DATA )	J	PCN 3	DMSR						
43	252123Z	17.0N 133.8E	P	10 700 90 70 340 55 60 340 55 983 295 15 12 - - -								4	
44	252202Z	17.0N 133.0E	SAT	(IR DATA )	J	PCN 3	DMSR						
45	252251Z	17.1N 134.0E	SAT	(IR DATA )	J	PCN 3	DMSR						
46	252252Z	17.3N 134.2E	SAT	(13.5/3.5 /01.0/23HRS)	PCN 3	DMSR							
47	260224Z	16.8N 132.1E	SAT	(14.5/4.5 /01.5/27HRS)	PCN 3	DMSR							
48	260224Z	16.9N 132.1E	SAT	(IR DATA )	J	PCN 1	DMSR						
49	260920Z	16.0N 130.8E	P	3 2 700 320 80 240 50 60 240 70 989 283 15 15	CTRL						30		
50	261043Z	16.8N 130.5E	SAT	(IR DATA )	J	PCN 2	DMSR						

TYPHOON ELAINE  
FIX POSITIONS FOR CYCLONE NO. 30  
0600Z 24 OCT TO 0600Z 31 OCT

FIX NO.	TIME	POSITI	FIX CAT	ACCHY	FIX LVL	FLT LVL	MAX OWS WIND	MAX OWS WIND	OBS SFC WIND	MIN 100MB WIND	FLT LVL	EYE FORM	ORIENT- ATION	EYE DIA	PUSIT OF	MSN NMHR	
							NAV-MET	LVL	DIR	VEL	BHG	RNG	VEL	BHG	RNG	SLP	
51	2014032	16.8N 130.4E	SAT	IIR DATA					PCN 1	DMSP							
52	201332	17.0N 130.3E	SAT	IIR DATA					PCN 1	DMSP							
53	201332	16.9N 130.4E	SAT	IIR DATA					PCN 1	DMSP							
54	201402	16.8N 130.0E	SAT	IIR DATA					PCN 1	DMSP							
55	201402	16.7N 129.4E	P	3 10 700	190	85 120	60	-	-	-	966	279	16 12	ELIP	N-S	40X15	5
56	201502	17.1N 129.1E	SAT	IIR DATA					PCN 1	DMSP							
57	201502	17.0N 130.1E	SAT	IIR DATA					PCN 1	DMSP							
58	201442	17.0N 127.7E	SAT	IIR DATA					PCN 1	DMSP							
59	2700152	16.9N 127.3E	SAT	(15.0/5.0 / 00.5/22HRS)					PCN 1	DMSP							
60	2700152	16.8N 127.2E	SAT	(15.0/5.0 / 5 / 24HRS)					PCN 1	DMSP							
61	2703452	16.7N 126.9E	SAT	(15.0/5.5 / / HRS)					PCN 1	DMSP							
62	2703452	17.0N 126.7E	SAT	IIR DATA					PCN 1	DMSP							
63	2703472	16.8N 126.7E	SAT	(15.0/5.0 / / HRS)					PCN 1	DMSP							
64	2704002	16.8N 126.6E	P	3 3 700	190	90 100	25	70 160	40	947	265	17 11	-	-	-	-	6
65	2704302	17.0N 125.5E	P	3 3 700	30	110 300	30	80 300	30	-	259	19 13	CTRC		35		6
66	2710272	17.0N 124.9E	SAT	IIR DATA					PCN 2	DMSP							
67	2710272	17.0N 124.9E	SAT	IIR DATA					PCN 1	DMSP							
68	2712492	18.0N 124.0E	SAT	IIR DATA					NUAA-3								
69	2712562	17.1N 124.4E	SAT	IIR DATA					PCN 1	DMSP							
70	2712562	17.1N 124.4E	SAT	IIR DATA					PCN 1	DMSP							
71	2714302	17.3N 123.7E	P	2 2 700	330	95 240	60	-	-	-	943	258	20 13	CTRC		35	7
72	2716282	17.3N 123.1E	SAT	IIR DATA					PCN 1	DMSP							
73	2723112	17.3N 122.4E	SAT	IIR DATA					PCN 2	DMSP							
74	2723572	17.3N 121.7E	SAT	(14.5/5.0+/W0.5/24HRS)					PCN 1	DMSP							
75	2723572	17.3N 121.5E	SAT	(15.0/5.0 / S / 24HRS)					PCN 1	DMSP							
76	2801132	16.8N 120.8E	SAT	(15.0/5.5 / W0.5/25HRS)					NUAA-3								
77	2803282	17.0N 120.9E	SAT	IIR DATA					PCN 3	DMSP							
78	2803282	17.0N 120.6E	SAT	IIR DATA					PCN 3	DMSP							
79	2809402	17.0N 119.8E	P	3 5 700	100	70 30	70	65 30	60	967	282	15 11	CTRC		40		8
80	2811542	17.0N 118.8E	SAT	IIR DATA					PCN 4	DMSP							
81	2812042	18.0N 119.4E	SAT	IIR DATA					NUAA-3								
82	2812382	18.1N 118.7E	SAT	IIR DATA					PCN 3	DMSP							
83	2812382	18.3N 118.6E	SAT	IIR DATA					PCN 3	DMSP							
84	2814302	17.9N 118.6E	P	3 5 700	50	90 330	100	-	-	-	-	284	14 10	CTRC		40	
85	2816102	17.9N 118.4E	SAT	IIR DATA					PCN 3	DMSP							
86	2816102	18.0N 118.5E	SAT	IIR DATA					PCN 3	DMSP							
87	2816102	18.0N 118.5E	SAT	IIR DATA					PCN 3	DMSP							
88	2816102	18.0N 118.4E	SAT	IIR DATA					PCN 4	DMSP							
89	2822552	18.2N 117.5E	SAT	(14.5/5.5+/W1.5/42HRS)					PCN 3	DMSP							
90	2900272	18.7N 116.4E	SAT	(14.0/5.0 / W1.0/24HRS)					NUAA-3								
91	2901202	19.1N 115.3E	SAT	(14.0/4.0 / / HRS)					PCN 5	DMSP							
92	2901202	18.9N 116.9E	SAT	(15.5/5.5 / / HRS)					PCN 1	DMSP							
93	2903102	18.9N 117.1E	SAT	(14.5/4.5 / S / 27HRS)					PCN 1	DMSP							
94	2903102	18.9N 117.3E	SAT	(15.0/5.0+/S / 27HRS)					PCN 1	DMSP							
95	2909352	19.4N 116.0E	P	10 5 700	200	60 110	100	40 120	120	977	290	13 10	-	-	-	-	9
96	2911382	19.2N 115.2E	SAT	IIR DATA					PCN 6	DMSP							
97	2912002	20.1N 115.5E	LRHM	- // / /													
98	2913152	19.2N 114.2E	SAT	IIR DATA					NUAA-3							22.3N 114.2E	
99	2914012	20.4N 115.1E	SAT	IIR DATA					PCN 6	DMSP							
100	2915002	20.2N 115.2E	LRHM	- // / /													
101	2915512	20.5N 114.9E	SAT	IIR DATA					PCN 5	DMSP							
102	2915512	21.5N 112.0E	SAT	IIR DATA					PCN 4	DMSP							
103	2921102	20.6N 113.3E	LRHM	- 30 // /													
104	2922492	21.2N 114.1E	SAT	(15.0/4.5-/W1.5/22HRS)					PCN 5	DMSP							
105	2922492	21.2N 114.3E	SAT	(14.5/4.5-/S / 24HRS)					PCN 5	DMSP							
106	2923002	20.7N 114.2E	LRHM	- 20 // /													
107	3000002	20.8N 114.1E	LRHM	- 25 // /													
108	3001002	20.9N 114.0E	LRHM	- 25 // /													
109	3001022	20.8N 113.6E	SAT	(15.0/4.0-/W1.0/24HRS)					PCN 3	DMSP							
110	3001022	20.9N 113.6E	SAT	IIR DATA					PCN 5	DMSP							
111	3001372	20.8N 113.0E	SAT	(15.0/4.0-/W1.0/25HRS)					NUAA-3								
112	3003002	21.0N 113.3E	LRHM	- 25 // /													
113	3004002	21.0N 113.8E	LRHM	- 25 // /													
114	3004322	21.1N 113.8E	SAT	IIR DATA					PCN 5	DMSP							
115	3005022	20.7N 113.6E	LRHM	- 55 // /													
116	3006004	20.9N 113.8E	LRHM	- 55 // /													
117	3007002	20.9N 113.8E	LRHM	- // / /													
118	3011232	21.0N 113.3E	SAT	IIR DATA					PCN 6	DMSP							
119	3011232	21.2N 113.6E	SAT	IIR DATA					PCN 6	DMSP							
120	3012002	21.0N 113.5E	LRHM	- 30 // /													
121	3013432	21.5N 113.2E	SAT	IIR DATA					PCN 3	DMSP							
122	3014502	20.8N 113.5E	LRHM	- 20 // /													
123	3011142	21.0N 113.7E	SAT	IIR DATA					PCN 6	DMSP							
124	3021002	20.9N 113.3E	LRHM	- 20 // /													
125	3022242	21.1N 113.6E	SAT	(11.5/2.5-/W1.5/24HRS)					PCN 5	DMSP							
126	3100002	20.8N 113.0E	LRHM	- 20 // /													
127	3100432	20.7N 113.0E	SAT	(12.0/3.0 / W1.0/24HRS)					PCN 3	DMSP							
128	3100432	20.6N 112.0E	SAT	(12.5/3.5-/W2.0/24HRS)					PCN 5	DMSP							
129	3103002	20.7N 112.7E	LRHM	- 15 // /													
130	3104142	20.5N 112.7E	SAT	IIR DATA					PCN 4	DMSP							
131	3100052	17.8N 110.2E	SAT	(11.5/1.5 / S / 20HRS)					PCN 3	DMSP							
132	3100552	17.3N 109.8E	SAT	IIR DATA					PCN 3	DMSP							

TROPICAL STORM PAYE  
FIX POSITIONS FOR CYCLONE NO. 31  
0600Z 01 NOV TO 0600Z 04 NOV

FIX NO.	TIME	POSIT I	FIX ACCRY	FIX	MAX OBS	MAX OBS	UWS	MIN	FLT	POSIT OF RADAR	MSN NMHR
		CAT NAV-MET	FLT LVL	WIND	SFC WIND	MIN	TOUMB	LVL	EYE	ORIENT	EYE
			LVL	DIR VEL BRG HNG	VEL BRG RNG	SLP	HGT	TI/TO	FORM	ATION	VIA
1	302224Z	11.4N 129.4E	SAT	(11.5/1.5 / / HMS)	PCN 5	DMSR					
2	310232Z	11.8N 128.8E	SAT	(IR DATA	PCN 5	DMSR					
3	310232Z	11.5N 128.7E	SAT	(12.0/2.0 / / HMS)	PCN 3	DMSR					
4	311107Z	12.1N 126.4E	SAT	(IR DATA	PCN 6	DMSR					
5	311514Z	12.5N 125.0E	SAT	(IR DATA	PCN 5	DMSR					
6	312209Z	13.1N 124.5E	SAT	(11.5/1.5 / 24HMS)	PCN 3	DMSR					
7	010008Z	12.8N 124.0E	SAT	(12.0/2.0 / 00.5/23HMS)	NOAA-3	(CONF 02)					
8	010025Z	13.2N 124.1E	SAT	(IR DATA	PCN 3	DMSR					
9	010025Z	13.0N 123.9E	SAT	(12.0/2.0 / / HMS)	PCN 5	DMSR					
10	010355Z	13.3N 123.0E	SAT	(11.5/1.5 / / HMS)	PCN 5	DMSR					
11	011052Z	12.9N 122.5E	SAT	(IR DATA	PCN 6	DMSR					
12	011252Z	13.8N 122.3E	SAT	(IR DATA	NOAA-3	(CONF 02)					
13	011637Z	13.6N 119.9E	SAT	(IR DATA	PCN 5	DMSR					
14	020007Z	13.9N 119.4E	SAT	(12.5/2.5 / 01.0/26HMS)	PCN 5	DMSR					
15	020007Z	13.8N 118.5E	SAT	(13.0/3.0 / 01.0/24HMS)	PCN 5	DMSR					
16	020330Z	13.9N 119.0E	SAT	(13.0/3.5 / / HMS)	PCN 3	DMSR					
17	020337Z	13.9N 118.9E	SAT	(12.5/2.5+ / 01.0/24HMS)	PCN 5	DMSR					
18	020337Z	14.0N 119.0E	SAT	(IR DATA	PCN 5	DMSR					
19	021037Z	14.5N 116.7E	SAT	(IR DATA	PCN 6	DMSR					
20	021040Z	14.4N 116.9E	P	5 5 / 700 160 20 120 40 - - - 990 299 15 13 - - -							1
21	021207Z	14.3N 116.1E	SAT	(IR DATA	NOAA-3	(CONF 02)					
22	021218Z	14.5N 116.5E	SAT	(IR DATA	PCN 5	DMSR					
23	021248Z	14.4N 116.5E	SAT	(IR DATA	PCN 5	DMSR					
24	021430Z	14.2N 116.2E	P	5 5 / 700 100 55 300 100 - - - 987 298 14 12 CTNC 20							1
25	021618Z	14.5N 116.2E	SAT	(IR DATA	PCN 5	DMSR					
26	022320Z	14.6N 114.9E	SAT	(13.5/3.5 / 01.0/24HMS)	PCN 5	DMSR					
27	030022Z	14.8N 113.0E	SAT	(13.5/3.5 / 00.5/24HMS)	NOAA-3	(CONF 02)					
28	030130Z	14.9N 114.2E	SAT	(14.0/4.0 / 01.0/25HMS)	PCN 3	DMSR					
29	030317Z	14.9N 112.2E	SAT	(IR DATA	NOAA-3	(CONF 02)					
30	030318Z	15.0N 113.6E	SAT	(IR DATA	PCN 6	DMSR					
31	030318Z	15.0N 113.2E	SAT	(13.5/3.5 / 01.0/27HMS)	PCN 3	DMSR					
32	031203Z	15.2N 112.4E	SAT	(IR DATA	PCN 5	DMSR					
33	031600Z	15.5N 111.3E	SAT	(IR DATA	PCN 5	DMSR					
34	032304Z	14.0N 109.9E	SAT	(11.5/2.5+ / 02.0/24HMS)	PCN 5	DMSR					
35	040112Z	15.9N 109.1E	SAT	(13.0/4.0 / 01.0/24HMS)	PCN 5	DMSR					
36	040441Z	14.6N 109.1E	SAT	(IR DATA	PCN 5	DMSR					
37	041148Z	14.7N 100.8E	SAT	(IR DATA	PCN 3	DMSR					

TYPHON GLORIA  
FIX POSITIONS FOR CYCLONE NO. 32  
0000Z 03 NOV TO 1200Z 09 NOV

FIX NO.	TIME	POSIT I	FIX ACCRY	FIX	MAX OBS	MAX OBS	UWS	MIN	FLT	POSIT OF RADAR	MSN NMHR
		CAT NAV-MET	FLT LVL	WIND	SFC WIND	MIN	TOUMB	LVL	EYE	ORIENT	EYE
			LVL	DIR VEL BRG HNG	VEL BRG RNG	SLP	HGT	TI/TO	FORM	ATION	VIA
1	292320Z	7.5N 148.9E	SAT	(11.0/1.0 / / HMS)	PCN 5	DMSR					
2	010910Z	5.9N 142.1E	SAT	(IR DATA	PCN 0	DMSR					
3	011532Z	6.4N 142.1E	SAT	(12.0/2.0 / 01.0/22HMS)	PCN 5	DMSR					
4	012252Z	6.5N 142.0E	SAT	(IR DATA	PCN 5	DMSR					
5	012324Z	5.5N 141.2E	SAT	(12.0/2.0 / 01.0/24HMS)	NOAA-3	(CONF 01)					
6	020155Z	6.4N 141.8E	SAT	(IR DATA	PCN 3	DMSR					
7	020855Z	5.7N 141.8E	SAT	(IR DATA	PCN 6	DMSR					
8	021106Z	6.3N 141.8E	SAT	(IR DATA	PCN 5	DMSR					
9	021437Z	6.4N 141.8E	SAT	(IR DATA	PCN 5	DMSR					
10	022138Z	7.0N 140.9E	SAT	(IR DATA	PCN 5	DMSR					
11	022729Z	7.0N 141.0E	SAT	(12.5/2.5 / 00.5/23HMS)	NOAA-3	(CONF 02)					
12	022338Z	7.8N 131.0E	SAT	(12.5/2.5 / / HMS)	PCN 3	DMSR					
13	022348Z	7.8N 130.6E	SAT	(12.5/2.5 / 00.5/20HMS)	PCN 5	DMSR					
14	030045Z	7.4N 141.3E	P	5 5 / 700 40 35 280	75 40 330 30 990 301 17 11 - - -					1	
15	030118Z	7.6N 140.7E	SAT	(IR DATA	PCN 5	DMSR					
16	030345Z	7.6N 140.9E	P	5 5 / 700 180 54 90	24 65 90 20 986 299 17 12 - - -					1	
17	031021Z	7.7N 140.0E	SAT	(IR DATA	PCN 0	DMSR					
18	031118Z	7.7N 139.4E	SAT	(IR DATA	NOAA-3	(CONF 02)					
19	031418Z	7.8N 139.3E	SAT	(IR DATA	PCN 6	DMSR					
20	032123Z	8.9N 138.3E	SAT	(IR DATA	PCN 3	DMSR					
21	032324Z	10.0N 138.0E	SAT	(14.0/4.0 / 01.5/25HMS)	NOAA-3	(CONF 02)					
22	032330Z	9.9N 137.8E	SAT	(13.5/3.5 / 01.0/24HMS)	PCN 5	DMSR					
23	032330Z	9.4N 138.2E	SAT	(14.0/4.0 / 01.5/24HMS)	PCN 5	DMSR					
24	040300Z	11.2N 137.1E	SAT	(IR DATA	PCN 5	DMSR					
25	040510Z	12.8N 136.2E	P	5 5 / 700 170 90 70	10 75 100 976 290 14 12 - - -					5	
26	041006Z	12.8N 136.0E	SAT	(IR DATA	PCN 4	DMSR					
27	041211Z	13.4N 135.7E	SAT	(IR DATA	PCN 5	DMSR					
28	041452Z	14.1N 134.3E	P	5 3 / 700 170 80 60	40 - - - 987 282 15 - CTNC					5	
29	041541Z	14.6N 134.5E	SAT	(IR DATA	PCN 5	DMSR					
30	042107Z	15.2N 132.7E	SAT	(IR DATA	PCN 5	DMSR					
31	042249Z	15.3N 132.6E	SAT	(IR DATA	PCN 5	DMSR					
32	042312Z	15.6N 131.5E	SAT	(12.0/5.0 / 01.5/24HMS)	PCN 1	DMSR					
33	042312Z	15.5N 131.5E	SAT	(12.0/5.0 / 01.0/24HMS)	PCN 1	DMSR					
34	050058Z	15.4N 131.4E	SAT	(14.0/4.0 / 75 / 24HRS)	NOAA-3	(CONF 02)					
35	050241Z	15.8N 130.7E	SAT	(IR DATA	PCN 1	DMSR					
36	050353Z	15.8N 130.7E	P	2 700 180 120 90	10 130 270 3 937 257 18 15 CTNC					0	
37	050444Z	16.0N 129.3E	P	5 2 700 - - -	- 110 180 10 949 260 21 - CTNC					0	
38	050950Z	16.1N 128.9E	SAT	(IR DATA	PCN 3	DMSR					
39	051132Z	16.0N 128.5E	SAT	(IR DATA	PCN 6	DMSR					
40	051145Z	16.0N 129.0E	SAT	(IR DATA	NOAA-3	(CONF 01)					
41	051153Z	16.3N 128.8E	SAT	(IR DATA	PCN 5	DMSR					
42	051523Z	16.3N 127.7E	SAT	(IR DATA	PCN 5	DMSR					
43	051535Z	15.8N 127.9E	P	10 2 700 130 15 40	15 - - - 955 270 17 15 CTNC						
44	052040Z	15.7N 127.0E	P	10 3 700 120 85 30	15 - - - 954 272 16 14 CTNC					1	
45	052234Z	15.7N 126.9E	SAT	(15.5/5.5 / 00.5/23HRS)	PCN 1	DMSR					
46	060010Z	16.1N 126.0E	SAT	(14.5/4.5 / 00.5/24HRS)	NOAA-3	(CONF 01)					
47	060035Z	15.9N 126.7E	SAT	(15.5/5.5- / 00.5/25HRS)	PCN 1	DMSR					
48	060222Z	16.1N 126.6E	SAT	(IR DATA	PCN 1	DMSR					
49	060404Z	16.3N 126.6E	SAT	(16.0/6.0 / / HMS)	PCN 1	DMSR					
50	060450Z	16.3N 126.2E	P	5 3 700 110 100 20	15 130 60 15 936 255 18 12 CTNC					8	

TYPHOON GLORIA  
FIX POSITIONS FOR CYCLONE NO. 32  
0900Z 03 NOV TO 1200Z 09 NOV

FIX NO.	TIME	POSITI ON	FIX ACC/HY	FIX CAT NAV-MET	FLT LVL	LVL	DIR	VEL	BKG	RNG	MAX OBS	SFC WIND	OBS	MIN	/100MB	LVL	EYE	ORIEN-	FLT	MISIT OF RADAR	MSN NNBM
											SLP	MGT	T1/T0	FORM	TATION	DIA					
51	060016Z	17.0N 125.2E	P	- 5	700	130 120	60	15	140	60	15	931	250	20	10	CIRC	20			8	
52	061117Z	17.1N 124.7E	SAT	(IR DATA							)	PCN 1	DMSP								
53	061316Z	17.2N 124.3E	SAT	(IR DATA							)	PCN 1	DMSP								
54	061504Z	17.2N 123.7E	SAT	(IR DATA							)	PCN 1	DMSP								
55	061606Z	17.1N 124.0E	SAT	(IR DATA							)	PCN 3	DMSP								
56	062218Z	17.0N 122.0E	SAT	(IR DATA							)	PCN 1	DMSP								
57	070017Z	18.0N 121.9E	SAT	(14.0/5.0 / WI.5/24HRS)							PCN 3	DMSP									
58	070017Z	18.1N 121.2E	SAT	(14.0/5.0/0 / WI.5/24HRS)							PCN 3	DMSP									
59	070120Z	18.0N 121.0E	SAT	(16.0/6.0 / WI.5/24HRS)							NOAA-3		(CONF 02)								
60	070144Z	17.9N 120.9E	LHM	-	60														16.0N 120.3E		
61	070230Z	17.9N 120.5E	LHM	-	60														16.0N 120.3E		
62	070320Z	18.0N 120.5E	LHM	-	60														16.0N 120.3E		
63	070345Z	18.2N 120.4E	SAT	(16.0/6.0 / S / 24HRS)							PCN 3	DMSP									
64	070345Z	18.2N 120.6E	SAT	(IR DATA							)	PCN 3	DMSP								
65	070345Z	17.9N 120.4E	LHM	-	60														16.0N 120.3E		
66	070400Z	18.0N 120.3E	LHM	-	60														16.0N 120.3E		
67	070430Z	18.0N 120.1E	LHM	-	60														16.0N 120.3E		
68	070500Z	18.0N 120.0E	LHM	-	60														16.0N 120.3E		
69	070630Z	18.5N 119.5E	LHM	-	75														16.0N 120.3E		
70	070900Z	18.2N 119.2E	LHM	-	60														16.0N 120.3E		
71	071101Z	18.7N 119.5E	SAT	(IR DATA							)	PCN 3	DMSP								
72	071101Z	18.7N 119.3E	SAT	(IR DATA							)	PCN 3	DMSP								
73	071211Z	19.4N 119.5E	SAT	(IR DATA							)	NOAA-3		(CONF 01)							
74	071258Z	18.6N 119.1E	SAT	(IR DATA							)	PCN 3	DMSP								
75	071257Z	18.5N 118.1E	SAT	(IR DATA							)	PCN 3	DMSP								
76	072344Z	19.0N 118.3E	SAT	(IR DATA							)	PCN 6	DMSP								
77	072358Z	20.1N 117.7E	SAT	(14.0/4.0 / S / 24HRS)							PCN 3	DMSP									
78	072358Z	19.0N 118.0E	SAT	(14.0/4.0 / S / 24HRS)							PCN 3	DMSP									
79	080033Z	19.8N 117.9E	SAT	(14.5/5.5 / #15/24HRS)							NOAA-3		(CONF 01)								
80	080130Z	20.0N 117.8E	P	10 10 700	140 35 50	30	45	250	20	180	298	15	13	-	-	-	-		10		
81	080327Z	20.2N 117.5E	SAT	(14.0/5.0-#12/0/24HRS)							PCN 1	UMSP									
82	080327Z	20.5N 117.6E	SAT	(IR DATA							)	PCN 1	UMSP								
83	080449Z	20.6N 117.6E	P	10 6 700	210 36 100	80	40	240	35	987	298	14	13	-	-	-	-		10		
84	081046Z	21.1N 117.4E	SAT	(IR DATA							)	PCN 3	UMSP								
85	081228Z	21.1N 116.8E	SAT	(IR DATA							)	PCN 5	UMSP								
86	081240Z	22.1N 117.2E	SAT	(IR DATA							)	PCN 3	UMSP								
87	081323Z	22.2N 116.5E	SAT	(IR DATA							)	NOAA-3		(CONF 01)							
88	081808Z	22.3N 116.9E	SAT	(IR DATA							)	PCN 5	UMSP								
89	081809Z	22.2N 116.6E	SAT	(IR DATA							)	PCN 5	UMSP								
90	082329Z	21.9N 116.9E	SAT	(IR DATA							)	PCN 3	UMSP								
91	082340Z	22.4N 116.7E	SAT	(12.5/3.5 / #15/24HRS)							PCN 3	UMSP									
92	090010Z	22.4N 116.8E	LHM	-	51//														22.3N 114.2E		
93	090112Z	22.4N 116.7E	SAT	(12.5/3.5-#15/24HRS)							PCN 3	UMSP									
94	090143Z	22.5N 116.5E	SAT	(13.0/4.0-#15/24HRS)							NOAA-3		(CONF 01)								
95	090300Z	22.5N 116.4E	LHM	-	51//														22.3N 114.2E		
96	090308Z	22.7N 116.7E	SAT	(IR DATA							)	PCN 3	UMSP								
97	090600Z	22.3N 116.4E	LHM	-	55//														22.3N 114.2E		
98	090900Z	22.1N 116.2E	LHM	-	55//														22.3N 114.2E		
99	091212Z	22.5N 116.0E	SAT	(IR DATA							)	PCN 5	UMSP								
100	091237Z	22.7N 116.0E	SAT	(IR DATA							)	NOAA-3		(CONF 02)							

TROPICAL STORM HESTER  
FIX POSITIONS FOR CYCLONE NO. 33  
1200Z 14 NOV TO 1200Z 15 NOV

FIX NO.	TIME	POSITI ON	FIX ACC/HY	FIX CAT NAV-MET	FLT LVL	LVL	DIR	VEL	BKG	RNG	MAX OBS	SFC WIND	OBS	MIN	/100MB	LVL	EYE	ORIEN-	FLT	MISIT OF RADAR	MSN NNBM
											SLP	MGT	T1/T0	FORM	TATION	DIA					
1	112352Z	12.5N 122.9E	SAT	(11.5/1.0 / 00.5/24HRS)							NOAA-3		(CONF 02)								
2	130008Z	14.3N 121.2E	SAT	(11.5/1.5 / / HRS)							PCN 5	DMSP									
3	130008Z	15.1N 121.8E	SAT	(12.0/1.5 / 00.5/24HRS)							NOAA-3		(CONF 02)								
4	130352Z	14.3N 121.3E	SAT	(IR DATA							)	PCN 5	UMSP								
5	131112Z	14.0N 119.1E	SAT	(IR DATA							)	PCN 5	UMSP								
6	131130Z	14.5N 118.0E	SAT	(IR DATA							)	NOAA-3		(CONF 02)							
7	131200Z	14.1N 119.1E	SAT	(IR DATA							)	PCN 5	UMSP								
8	132300Z	14.8N 117.3E	SAT	(11.5/1.5 / S / 24HRS)							PCN 5	UMSP									
9	140122Z	14.0N 116.6E	SAT	(11.5/1.5 / / HRS)							PCN 5	DMSP									
10	140120Z	15.5N 116.0E	SAT	(12.5/2.5 / 00.5/24HRS)							NOAA-3		(CONF 02)								
11	140317Z	13.4N 110.2E	SAT	(IR DATA							)	PCN 3	UMSP								
12	141055Z	13.4N 114.2E	SAT	(IR DATA							)	PCN 5	UMSP								
13	141055Z	13.4N 114.4E	SAT	(IR DATA							)	PCN 5	UMSP								
14	141238Z	13.5N 114.0E	SAT	(IR DATA							)	NOAA-3		(CONF 02)							
15	141558Z	13.4N 113.7E	SAT	(IR DATA							)	PCN 5	UMSP								
16	142338Z	13.2N 111.1E	SAT	(IR DATA							)	PCN 3	UMSP								
17	150113Z	13.6N 110.9E	SAT	(13.5/3.5 / / HRS)							PCN 1	DMSP									
18	150113Z	13.4N 110.9E	SAT	(13.0/3.0 / 00.5/24HRS)							PCN 1	UMSP									
19	150440Z	13.0N 110.0E	SAT	(IR DATA							)	PCN 1	UMSP								
20	151222Z	12.5N 107.9E	SAT	(IR DATA							)	PCN 1	UMSP								

TYPHOON IRMA  
FIX POSITIONS FOR CYCLONE NO. 34  
1200Z 21 NOV TO 0600Z 02 DEC

FIX NO.	TIME	POSII	CAT	ACCRY	FLT	LVL	WIND	SFC	WIND	MIN	FLT	MAX OBS		MAX OBS		OBS		MIN		FLT		EYE		URLEN-		EYE		PUSIT	
												NAV-MET	LVL	DIR	VEL	BHG	KNG	VEL	BRG	ANG	SLP	HGT	T1/T0	FORM	TATION	DIA	OF	MADAR	MSN
1	162138Z	7.0N 154.9E	SAT	(1e.0/2.0 /D1.0/24HRS)				NOAA-3	(CONF 02)																				
2	170827Z	9.1N 155.0E	SAT	(IR DATA	)			PCN 6	UMSP																				
3	171019Z	10.0N 155.0E	SAT	(IR DATA	)			NUAA-3		(CONF 02)																			
4	171321Z	9.4N 154.8E	SAT	(IR DATA	)			PCN 6	UMSP																				
5	172110Z	10.0N 153.7E	SAT	(11.0/1.0 /	/	HKS)		PCN 5	UMSP																				
6	172237Z	10.1N 153.4E	SAT	(IR DATA	)			PCN 5	UMSP																				
7	180954Z	10.5N 152.7E	SAT	(IR DATA	)			PCN 5	UMSP																				
8	190938Z	9.0N 147.2E	SAT	(IR DATA	)			PCN 6	UMSP																				
9	192039Z	8.6N 148.0E	SAT	(11.0/1.0 /	/	HKS)		PCN 5	UMSP																				
10	200923Z	7.7N 143.1E	SAT	(IR DATA	)			PCN 6	UMSP																				
11	202228Z	7.9N 141.8E	SAT	(12.5/2.5 /D1.5/24HRS)				NOAA-3		(CONF 01)																			
12	202323Z	8.8N 143.0E	SAT	(11.5/1.5 /D0.5/24HRS)				PCN 5	UMSP																				
13	210248Z	9.5N 143.3E	SAT	(IR DATA	)			PCN 5	UMSP																				
14	210907Z	9.6N 142.0E	SAT	(IR DATA	)			PCN 6	UMSP																				
15	211109Z	8.5N 139.5E	SAT	(IR DATA	)			NUAA-3		(CONF 02)																			
16	211205Z	9.5N 141.8E	SAT	(IR DATA	)			PCN 5	UMSP																				
17	211530Z	9.5N 141.5E	SAT	(IR DATA	)			PCN 5	UMSP																				
18	212133Z	11.2N 140.8E	P	10 3 1500	120	35	70	80	25	70	80	997	-	24	-	-	-	-	-	-	-	-	-	-	-	-	-	1	
19	212150Z	11.5N 140.8E	SAT	(IR DATA	)			PCN 5	UMSP																				
20	212305Z	11.7N 140.5E	SAT	(11.5/1.5 /S	/	24HRS)		PCN 5	UMSP																				
21	212305Z	11.2N 140.6E	SAT	(11.5/1.5 /	/	HKS)		PCN 5	UMSP																				
22	212305Z	10.2N 140.0E	SAT	(11.5/1.5 /	/	HKS)		PCN 5	UMSP																				
23	212338Z	11.0N 140.7E	SAT	(12.5/2.5 /S	/	24HRS)		NOAA-3		(CONF 02)																			
24	220043Z	10.3N 140.3E	P	3 5 1500	260	36	150	18	40	150	18	997	37	23	-	-	-	-	-	-	-	-	-	-	-	-	1		
25	220230Z	11.2N 140.2E	SAT	(IR DATA	)			PCN 5	UMSP																				
26	220304Z	10.3N 140.0E	P	5 5 - 1500	30	25	300	15	20	300	10	996	37	23	-	-	-	-	-	-	-	-	-	-	-	-	1		
27	220933Z	11.1N 140.5E	P	10 20 700	100	30	360	40	20	360	30	994	304	13	12	-	-	-	-	-	-	-	-	-	-	-	2		
28	221024Z	11.5N 140.4E	SAT	(IR DATA	)			NOAA-3		(CONF 02)																			
29	221147Z	11.3N 140.3E	SAT	(IR DATA	)			PCN 5	UMSP																				
30	221511Z	11.1N 140.2E	SAT	(IR DATA	)			PCN 3	UMSP																				
31	221511Z	11.8N 140.3E	SAT	(IR DATA	)			PCN 5	UMSP																				
32	222247Z	12.6N 139.8E	SAT	(11.0/3.0 /D1.5/24HRS)				PCN 6	UMSP																				
33	222250Z	12.2N 139.0E	SAT	(11.5/3.5 /D1.0/24HRS)				NOAA-3		(CONF 02)																			
34	230211Z	11.9N 139.3E	SAT	(13.0/3.0 /D1.5/27HRS)				PCN 1	UMSP																				3
35	230211Z	12.0N 139.2E	SAT	(IR DATA	)			PCN 1	UMSP																				
36	230506Z	12.3N 139.1E	P	5 5 700	160	55	80	90	50	80	90	983	296	14	11	-	-	-	-	-	-	-	-	-	-	-			
37	230835Z	12.7N 137.9E	P	5 5 700	110	78	20	150	65	20	60	985	295	15	-	EI	T	N-S	40X20										
38	231018Z	13.2N 138.5E	SAT	(IR DATA	)			PCN 3	UMSP																				
39	231128Z	13.9N 138.2E	SAT	(IR DATA	)			PCN 3	UMSP																				
40	231134Z	13.0N 138.0E	SAT	(IR DATA	)			NOAA-3		(CONF 01)																			
41	231453Z	12.9N 137.3E	SAT	(IR DATA	)			PCN 1	UMSP																				
42	231455Z	13.6N 137.6E	SAT	(IR DATA	)			PCN 3	UMSP																				
43	232119Z	13.6N 136.7E	SAT	(IR DATA	)			PCN 3	UMSP																				
44	232120Z	13.3N 136.0E	SAT	(14.0/4.0 /D1.0/19HRS)				PCN 3	UMSP																				
45	232320Z	13.7N 136.5E	P	1 2 700	170	82	70	35	70	80	975	288	14	11	CTHC													4	
46	240001Z	13.2N 135.5E	SAT	(14.5/4.5 /D1.0/24HRS)				NOAA-3		(CONF 01)																			
47	240101Z	13.5N 136.9E	SAT	(IR DATA	)			PCN 3	UMSP																				
48	240101Z	14.0N 136.4E	SAT	(14.5/4.5 /D1.5/24HRS)				PCN 3	UMSP																				
49	240152Z	13.8N 136.6E	SAT	(IR DATA	)			PCN 3	UMSP																				
50	240328Z	13.9N 135.6E	P	2 2 700	190	75	90	80	75	90	80	973	285	13	11	CTHC											15		
51	240354Z	14.0N 135.7E	SAT	(IR DATA	)			PCN 1	UMSP																				
52	241003Z	14.5N 134.5E	SAT	(IR DATA	)			PCN 1	UMSP																				
53	241003Z	14.4N 134.7E	SAT	(IR DATA	)			PCN 1	UMSP																				
54	241050Z	14.5N 134.5E	SAT	(IR DATA	)			NOAA-3		(CONF 01)																			
55	241108Z	14.4N 134.6E	SAT	(IR DATA	)			PCN 2	UMSP																				
56	241434Z	14.7N 133.7E	SAT	(IR DATA	)			PCN 1	UMSP																				
57	242246Z	14.9N 133.4E	SAT	(IR DATA	)			PCN 1	UMSP																				
58	242314Z	15.0N 133.5E	SAT	(15.5/5.5 /D1.0/23HRS)				NOAA-3		(CONF 01)																			
59	242322Z	15.0N 133.3E	SAT	(15.0/5.0 /D1.0/22HRS)				PCN 1	UMSP																				
60	242352Z	15.0N 133.2E	SAT	(15.0/5.0 /D0.5/24HRS)				PCN 1	UMSP																				
61	250315Z	15.0N 133.1E	SAT	(15.5/5.5 /	/	HKS)		PCN 1	UMSP																				6
62	250315Z	15.0N 133.1E	SAT	(IR DATA	)			PCN 1	UMSP																				
63	251557Z	15.1N 131.8E	SAT	(15.0/5.0 /	/	HKS)		PCN 1	UMSP																				
64	251947Z	15.3N 132.1E	SAT	(IR DATA	)			PCN 1	UMSP																				
65	250947Z	15.4N 131.9E	SAT	(IR DATA	)			PCN 1	UMSP																				
66	251004Z	15.4N 132.6E	P	4 1 700	270	100	150	50</																					

TYPHOON IRMA  
FIX POSITIONS FOR CYCLONE NO. 34  
1200Z 21 NOV TO 0600Z 02 DEC

FIX NO.	TIME	POSII	FIX CAT NAV-MET	ACCHY	FIX LVL	FLT LVL	WIND	MAX OBS DIR VEL BRG RNG	MAX UBS VEL BRG RNG	OBS VEL BRG RNG	MIN SLP	100MB	LVL HGT	FLY TI/TO	EYE	ORIEN- TATION	EYE DIA	POSET OF RADAR	MSN NMBR
101	270238Z	15.7N 125.9E	SAT	(IR DATA	)	PCN 1	UMSP												
102	270238Z	15.8N 126.0E	SAT	(IR DATA	)	PCN 1	UMSP												
103	270245Z	15.7N 126.2E	P 10	5 700	280 162 180	30	-	-	-	940	256	19 13	CTRC					13.1N 123.7E	
104	270800Z	15.6N 125.0E	LHDN	- 8493/															
105	271030Z	15.7N 124.5E	LHDN	- OPEN CIRCULAR EYE														18.1N 120.5E	
106	271058Z	15.5N 124.4E	SAT	(IR DATA	)	PCN 1	UMSP												
107	271058Z	15.6N 124.5E	SAT	(IR DATA	)	PCN 3	UMSP												
108	271100Z	15.6N 124.3E	LHDN	- 848//														13.1N 123.7E	
109	271106Z	15.6N 124.4E	SAT	(IR DATA	)	PCN 1	UMSP												
110	271157Z	15.6N 124.2E	SAT	(IR DATA	)	PCN 3	UMSP												
111	271200Z	15.6N 124.3E	LHDN	- CIRCULAR EYE, 25 NM DIAM														18.1N 120.5E	
112	271225Z	15.5N 124.0E	SAT	(IR DATA	)	PCN 3	DMSP											18.1N 120.5E	
113	271300Z	15.8N 124.2E	LHDN	- CIRCULAR EYE, 55 NM DIAM															
114	271400Z	15.6N 123.5E	LHDN	- 84742														18.1N 120.5E	
115	271400Z	15.6N 123.8E	LHDN	- CIRCULAR EYE, SEVERE ATTENUATION, 50 NM DIAM														13.1N 123.7E	
116	271500Z	15.7N 123.5E	LHDN	- CIRCULAR EYE, SEVERE ATTENUATION, 50 NM DIAM														14.1N 120.5E	
117	271520Z	15.5N 123.7E	SAT	(IR DATA	)	PCN 3	DMSP											18.1N 120.5E	
118	271520Z	15.7N 123.1E	SAT	(IR DATA	)	PCN 1	UMSP												
119	271600Z	15.5N 123.5E	LHDN	- SEVERE ATTENUATION														14.1N 120.5E	
120	271700Z	15.6N 123.4E	LHDN	- ELLIPTICAL AXIS EXW														14.1N 120.5E	
121	271800Z	15.5N 123.1E	LHDN	- ELLIPTICAL														14.1N 120.5E	
122	271900Z	15.5N 123.0E	LHDN	- ELLIPTICAL														14.1N 120.5E	
123	272000Z	15.5N 122.7E	LHDN	- ELLIPTICAL														14.1N 120.5E	
124	272105Z	15.6N 122.5E	LHDN	- CIRCULAR EYE, 50 NM DIAM														14.1N 120.5E	
125	272200Z	15.6N 121.9E	SAT	(IR DATA	)	PCN 5	UMSP											14.1N 120.5E	
126	272200Z	15.6N 122.2E	LHDN	- ELLIPTICAL EYE, 50 NM DIAM														14.1N 120.5E	
127	272300Z	15.6N 122.1E	LHDN	- CIRCULAR EYE, 50 NM DIAM														14.1N 120.5E	
128	280030Z	15.3N 121.6E	LHDN	- CIRCULAR EYE, 50 NM DIAM, 50 PERCENT WALL CLOUD														15.1N 120.0E	
129	280038Z	15.5N 121.3E	SAT	(TS.0/6.0-/W1.0/25HRS)		PCN 5	UMSP												
130	280050Z	15.4N 121.9E	SAT	(TS.5/3.5 /S /23HRS)		NON	UMSP												
131	280100Z	15.4N 121.6E	LHDN	-															
132	280138Z	15.4N 121.4E	LHDN	- GOOD FIX, 15 DEG SPIRAL OVERLAY														14.1N 120.5E	
133	280210Z	15.3N 121.2E	LHDN	- 15 DEG SPIRAL OVERLAY														15.1N 120.5E	
134	280330Z	15.2N 121.0E	LHDN	- CIRCULAR EYE, 60 PERCENT WALL CLOUD, 27 NM DIAM														15.1N 120.5E	
135	280401Z	15.2N 121.0E	LHDN	- GOOD FIX, 60 PERCENT WALL CLOUD, CIRCULAR EYE, 27 NM DIAM														15.1N 120.5E	
136	280404Z	15.4N 120.7E	SAT	(IR DATA	)	PCN 6	DMSP											15.1N 120.5E	
137	280600Z	15.4N 120.6E	LHDN	- 2043/															
138	280900Z	15.5N 120.1E	LHDN	- 1190/														14.0N 121.0E	
139	281130Z	15.3N 119.7E	LHDN	- CIRCULAR EYE, 45 PERCENT WALL CLOUD, 45 NM DIAM														14.0N 121.0E	
140	281130Z	15.2N 119.8E	LHDN	- CIRCULAR EYE, 50 PERCENT WALL CLOUD, 40 NM DIAM														14.0N 120.5E	
141	281140Z	15.0N 118.0E	SAT	(IR DATA	)	NOAA-3	(CONF 01)											15.0N 120.5E	
142	281230Z	15.4N 119.4E	LHDN	- CIRCULAR EYE, 55-60 PERCENT WALL CLOUD, 35-45 NM DIAM														16.0N 120.5E	
143	281500Z	15.7N 118.2E	LHDN	- CIRCULAR EYE, OPEN E, 50 PERCENT WALL CLOUD, 25 NM DIAM														16.0N 120.5E	
144	281600Z	15.4N 118.2E	LHDN	- CIRCULAR EYE, 60 PERCENT WALL CLOUD, 28 NM DIAM														16.0N 120.5E	
145	281643Z	15.3N 117.7E	SAT	(IR DATA	)	PCN 6	DMSP												
146	281715Z	15.3N 118.5E	LHDN	- ELLIPTICAL EYE, 50 PERCENT WALL CLOUD														16.0N 120.5E	
147	281739Z	15.1N 118.6E	P 2	1 5 700 0 56 36 58	-	-	-	986	295	17 13	CTRC							16.0N 120.5E	
148	281810Z	15.3N 118.2E	LHDN	- CIRCULAR EYE, OPEN E, 50 PERCENT WALL CLOUD, 18 NM DIAM														16.0N 120.5E	
149	282205Z	15.5N 117.8E	P 3	5 700 200 65 150 40	-	-	-	980	293	19	-	CTRC						16.0N 120.5E	
150	290006Z	15.3N 117.8E	SAT	(TS.0/4.0-/D0.5/25HRS)		NOAA-3	(CONF 02)											11	
151	290020Z	15.4N 117.5E	SAT	(TS.0/4.0 / / HRS)		PCN 5	DMSP												
152	290420Z	15.1N 117.6E	SAT	(TS.0/4.0-/W1.0/24HRS)		PCN 3	UMSP												
153	290422Z	16.0N 116.8E	SAT	(IR DATA	)	PCN 3	UMSP												
154	290422Z	15.2N 116.4E	SAT	(TS.0/5.0 / / HRS)		PCN 3	UMSP												
155	291005Z	15.4N 116.7E	P 1	3 700 360 65 250	33 50 30 44	982	292	17 14	ELIP	SE-NW	20X25							12	
156	291250Z	16.0N 115.5E	SAT	(IR DATA	)	NOAA-3	(CONF 01)												
157	291302Z	15.9N 115.0E	SAT	(IR DATA	)	PCN 5	UMSP												
158	291302Z	15.4N 114.1E	SAT	(IR DATA	)	PCN 6	UMSP												
159	291624Z	15.4N 114.4E	SAT	(IR DATA	)	PCN 4	UMSP												
160	300002Z	16.4N 113.4E	SAT	(TS.0/4.0-/D1.0/24HRS)		PCN 1	DMSP												
161	300002Z	16.4N 113.5E	SAT	(TS.0/4.0-/D1.0-/24HRS)		PCN 1	UMSP												
162	300144Z	15.8N 113.0E	SAT	(TS.4.5/4.5 / / HRS)		NOAA-3	(CONF 01)												
163	300324Z	16.3N 113.1E	SAT	(IR DATA	)	PCN 1	UNSP												
164	300324Z	16.2N 112.9E	SAT	(TS.0/5.0 / / S / 24HRS)		PCN 1	UMSP												
165	300505Z	16.3N 113.0E	SAT	(IR DATA	)	PCN 2	UMSP												
166	301205Z	17.4N 112.2E	SAT	(IR DATA	)	NOAA-3	(CONF 02)												
167	301243Z	17.5N 112.3E	SAT	(IR DATA	)	PCN 1	UMSP												
168	301243Z	17.0N 112.2E	SAT	(IR DATA	)	PCN 1	UMSP												
169	301606Z	17.6N 112.1E	SAT	(IR DATA	)	PCN 1	UMSP												
170	301606Z	17.6N 111.8E	SAT	(IR DATA	)	PCN 3	UMSP												
171	010028Z	19.8N 111.4E	SAT	(TS.0/5.0-/D0.5/24HRS)		NOAA-3	(CONF 02)												
172	010125Z	18.7N 112.1E	SAT	(TS.0/4.0-/0-S / 24HRS)		PCN 3	UMSP												
173	010447Z	19.2N 111.8E	SAT	(TS.0/0.0-/D1.0-/24HRS)		PCN 1	UMSP												
174	011316Z	20.8N 112.0E	SAT	(IR DATA	)	NOAA-3	(CONF 02)												
175	011407Z	20.5N 112.0E	SAT	(IR DATA	)	PCN 4	UMSP												
176	011500Z	20.5N 111.7E	LHDN	- 55/4															
177	011728Z	20.9N 112.4E	SAT	(IR DATA	)	PCN 5	DMSP										22.3N 114.2E		
178	011800Z	21.0N 112.2E	LHDN	- 55/3														22.3N 114.2E	
179	020107Z	21.7N 113.6E	SAT	(IR DATA	)	PCN 5	DMSP												

TROPICAL STORM JUDY  
FIX POSITIONS FOR CYCLONE NO. 35  
0000Z 18 DEC TO 0000Z 19 DEC

FIX NO.	TIME	POSII	FIX CAT	ACCRY	FIX LVL	FLT	MAX OBS WIND	MAX OBS SFC WIND	OBS MIN	MIN 700MB	LVL	FLT	EYE	URGEN-	EYE	PUSIT OF	MSN
			NAV-MET	LVL	DIR	VEL	BKG RNG	SLP	HGT	700MB	LVL	TI/TD	FORM	TATION	VIA	HADAR	NHBN
1	140050Z	8.0N 127.7E	SAT	(IN DATA)	(12.0/2.0 / / HRS)	PCN 5	UMSP										
2	150032Z	12.0N 122.5E	SAT	(IN DATA)	(11.5/1.5 / / HRS)	PCN 5	UMSP										
3	151313Z	12.3N 121.6E	SAT	(IN DATA)	( )	PCN 6	UMSP										
4	160013Z	12.0N 119.7E	SAT	(IN DATA)	(11.5/1.5 / / 24HRS)	PCN 5	UMSP										
5	161325Z	13.0N 116.8E	SAT	(IN DATA)	( )	NOAA-4											
6	162355Z	14.0N 115.8E	SAT	(IN DATA)	( )	PCN 5	UMSP										
7	170150Z	13.0N 116.0E	SAT	(IN DATA)	(12.5/2.5 / / 01.0/25HRS)	NOAA-4											
8	171237Z	15.0N 113.5E	SAT	(IN DATA)	( )	PCN 6	UMSP										
9	171312Z	16.0N 113.5E	SAT	(IN DATA)	( )	NOAA-4											
10	180129Z	13.2N 112.5E	SAT	(IN DATA)	(13.0/3.0 / / 00.5/24HRS)	NOAA-4											
11	180436Z	12.0N 112.0E	SAT	(IN DATA)	(12.0/2.0 / / HRS)	PCN 5	UMSP										
12	181210Z	12.0N 109.8E	SAT	(IN DATA)	( )	NOAA-4											
13	181717Z	12.0N 109.1E	SAT	(IN DATA)	( )	PCN 5	UMSP										

TROPICAL STORM KIT  
FIX POSITIONS FOR CYCLONE NO. 36  
0600Z 19 DEC TO 0600Z 24 DEC

FIX NO.	TIME	POSII	FIX CAT	ACCRY	FIX LVL	FLT	MAX OBS WIND	MAX OBS SFC WIND	OBS MIN	MIN 700MB	LVL	FLT	EYE	URGEN-	EYE	PUSIT OF	SN
			NAV-MET	LVL	DIR	VEL	BKG RNG	SLP	HGT	700MB	LVL	TI/TD	FORM	TATION	VIA	HADAR	NHBN
1	171055Z	22.0N 143.0E	SAT	(IN DATA)	( )	PCN 6	UMSP										
2	172337Z	4.0N 140.9E	SAT	(IN DATA)	(11.5/1.5 / / HRS)	PCN 5	UMSP										
3	180254Z	8.0N 135.0E	SAT	(IN DATA)	( )	PCN 5	UMSP										
4	181218Z	11.0N 135.0E	SAT	(IN DATA)	( )	PCN 6	UMSP										
5	182317Z	10.0N 134.9E	SAT	(IN DATA)	(12.0/2.0 / / 00.5/24HRS)	PCN 3	UMSP										
6	190029Z	12.0N 132.9E	SAT	(IN DATA)	(11.5/1.5 / / 00.5/24HRS)	NOAA-4											
7	190255Z	19.0N 135.4E	SAT	(IN DATA)	( )	PCN 3	UMSP										
8	190255Z	19.0N 133.0E	SAT	(IN DATA)	(12.0/2.0 / / HRS)	PCN 5	UMSP										
9	191200Z	11.0N 130.0E	SAT	(IN DATA)	( )	PCN 6	UMSP										
10	191516Z	11.0N 129.0E	SAT	(IN DATA)	( )	PCN 5	UMSP										
11	191517Z	11.0N 129.0E	SAT	(IN DATA)	( )	PCN 6	UMSP										
12	200042Z	11.0N 128.0E	SAT	(IN DATA)	(11.5/1.5 / / HRS)	PCN 5	UMSP										
13	200125Z	11.0N 127.5E	SAT	(IN DATA)	(12.0/2.5 / / 01.0/25HRS)	NOAA-4											
14	200358Z	11.0N 126.0E	SAT	(IN DATA)	( )	PCN 5	UMSP										
15	200555Z	10.0N 125.2E	SAT	(IN DATA)	( )	PCN 5	UMSP										
16	201206Z	13.0N 124.0E	SAT	(IN DATA)	( )	NOAA-4											
17	201323Z	10.0N 123.0E	SAT	(IN DATA)	( )	PCN 5	UMSP										
18	201404Z	11.0N 124.0E	SAT	(IN DATA)	( )	PCN 5	UMSP										
19	210023Z	11.0N 122.0E	SAT	(IN DATA)	(11.0/1.5 / / HRS)	PCN 5	UMSP										
20	210046Z	14.0N 122.0E	SAT	(IN DATA)	(12.5/2.5 / / 24HRS)	NOAA-4											
21	210502Z	11.0N 121.9E	SAT	(IN DATA)	( )	PCN 3	UMSP										
22	210502Z	11.0N 121.9E	SAT	(IN DATA)	(11.0/1.0 / / HRS)	PCN 3	UMSP										
23	211302Z	14.0N 120.0E	SAT	(IN DATA)	( )	NOAA-4											
24	220005Z	10.0N 117.0E	SAT	(IN DATA)	(11.0/1.5 / / 00.5/24HRS)	PCN 5	UMSP										
25	221201Z	15.0N 115.0E	SAT	(IN DATA)	( )	NOAA-4											
26	221247Z	19.0N 114.5E	SAT	(IN DATA)	( )	PCN 6	UMSP										
27	231168Z	9.0N 112.5E	SAT	(IN DATA)	(12.0/2.0 / / HRS)	PCN 3	UMSP										
28	231186Z	9.0N 112.0E	SAT	(IN DATA)	(12.0/2.0 / / HRS)	PCN 3	UMSP										
29	231255Z	9.0N 110.0E	SAT	(IN DATA)	( )	NOAA-4											
30	231414Z	7.0N 109.0E	SAT	(IN DATA)	( )	PCN 5	UMSP										
31	231725Z	9.0N 109.3E	SAT	(IN DATA)	( )	PCN 5	UMSP										
32	240110Z	9.0N 109.0E	SAT	(IN DATA)	(12.0/2.0 / / HRS)	PCN 3	UMSP										
33	240110Z	9.0N 109.0E	SAT	(IN DATA)	(12.0/2.0 / / 24HRS)	PCN 3	UMSP										
34	241115Z	9.0N 106.5E	SAT	(IN DATA)	(11.0/1.5 / / 00.5/24HRS)	NOAA-4											
35	240426Z	9.0N 105.0E	SAT	(IN DATA)	( )	PCN 5	UMSP										